

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest.

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Bear Ye One Another's Burdens

THOUGH the country in its business depression is merely paying the inevitable and the easily-foreseen penalty for its ten-year war upon business—a war which has brought poverty to millions and halted our National progress, a war waged with more of hate and less of excuse than even Europe's awful struggle—we must as a nation seek to overcome the results of our own country's mistakes and our own blind following of false leaders. As in Europe's war the innocent are suffering with the guilty, so in our war on success the innocent are bearing the burden as fully as those responsible for this condition.

At such a time it is incumbent upon individuals and communities to heed the Divine command, "Bear ye one another's burdens," and do all that is possible to create employment for the idle men who now vainly seek work.

The community, whether it be county, town, city, state or nation, owes it to itself and to the unemployed to help bear their burdens by creating work wherever this can wisely be done by public improvements, even if in doing so heavier taxes have to be laid upon all property interests. In the end these improvements, if wisely made, will be worth to the whole community far more than their cost.

The ability of municipalities to sell securities for such work, and the wisdom of doing this now, are broadly discussed in this issue by many bankers and bond buying and selling houses.

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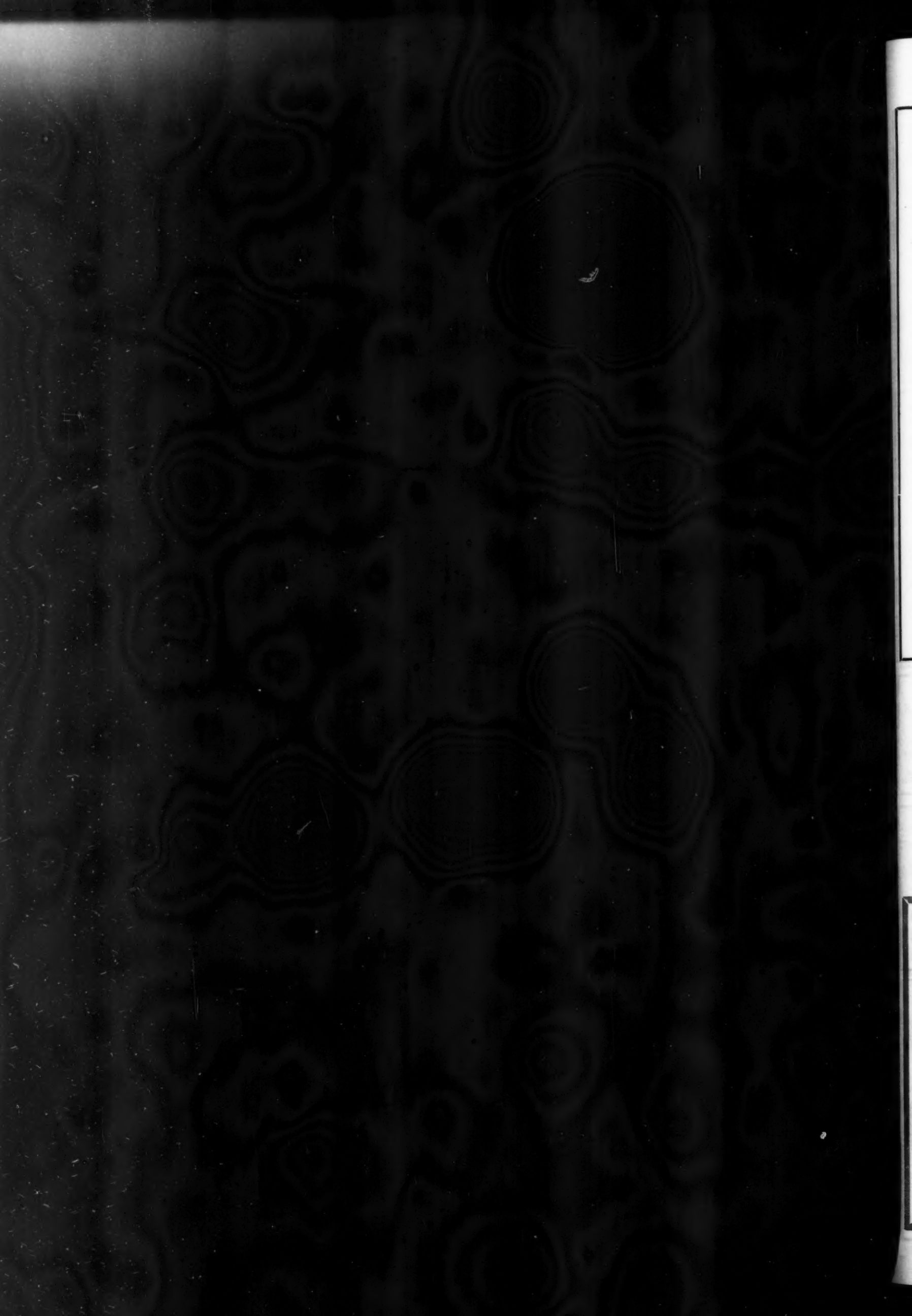
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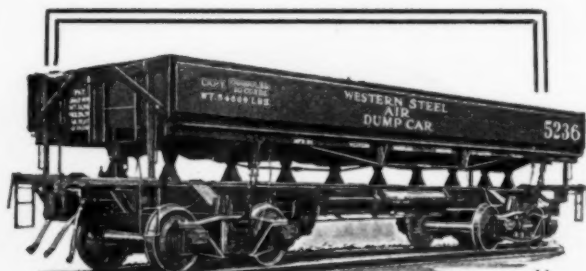
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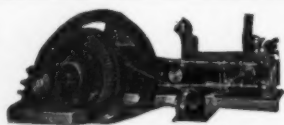
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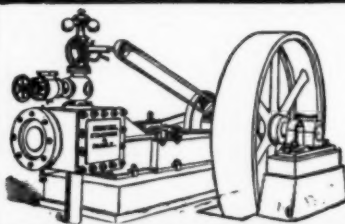
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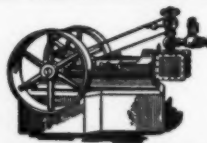
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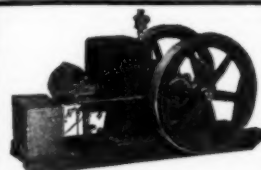
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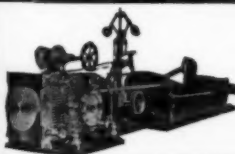
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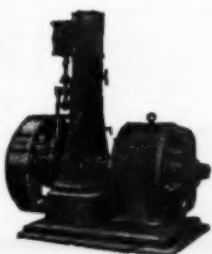
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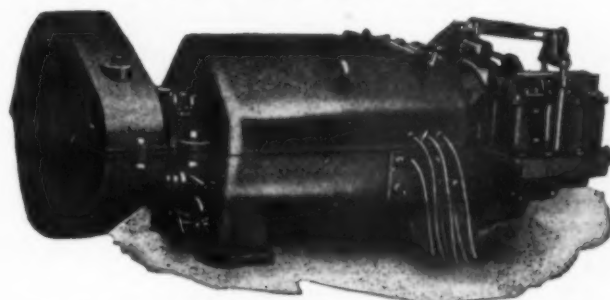
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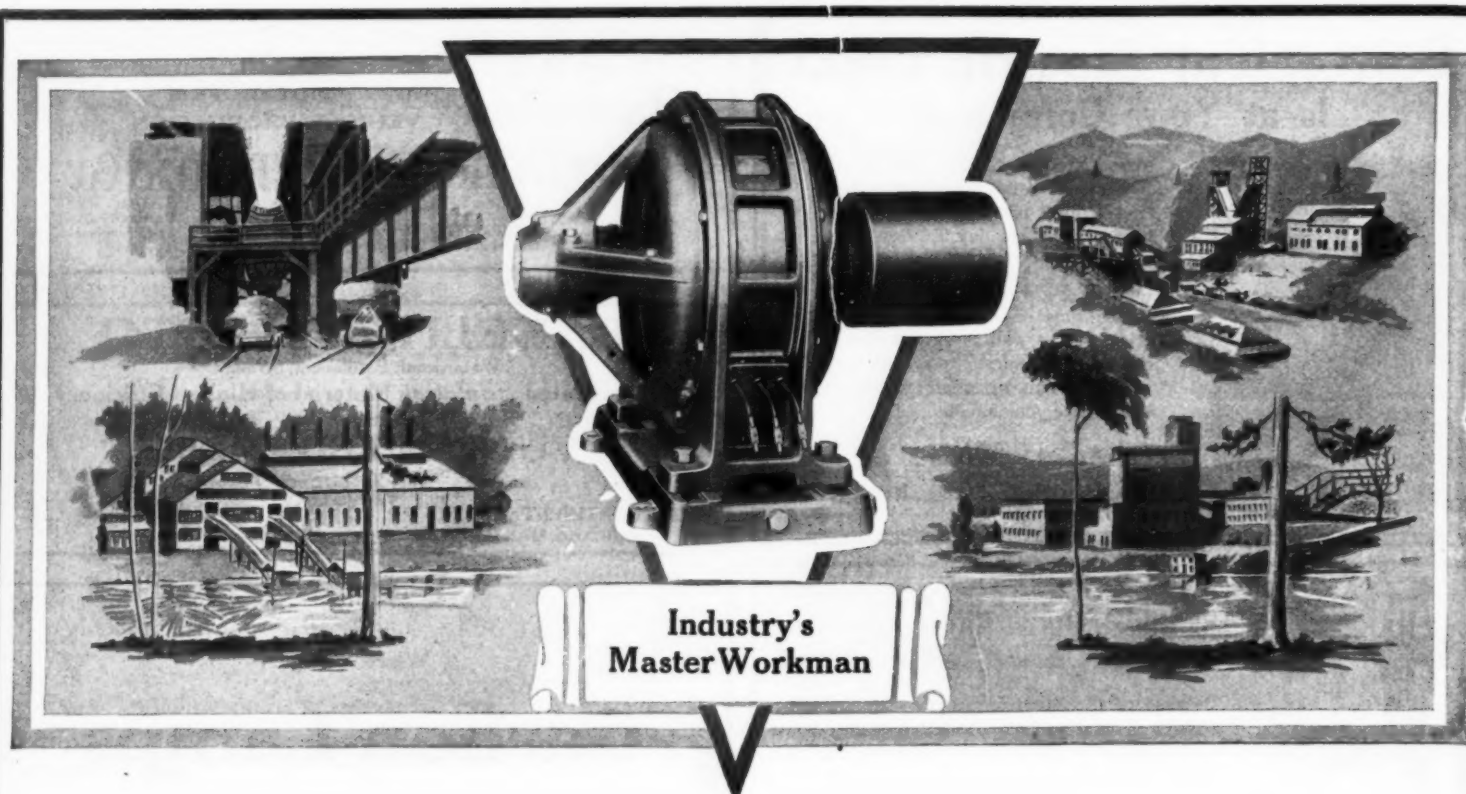
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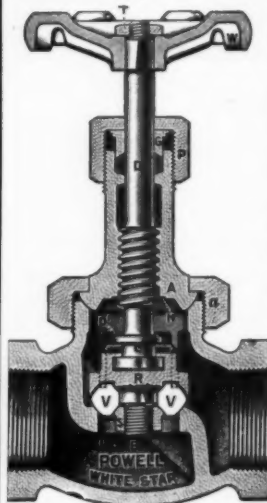
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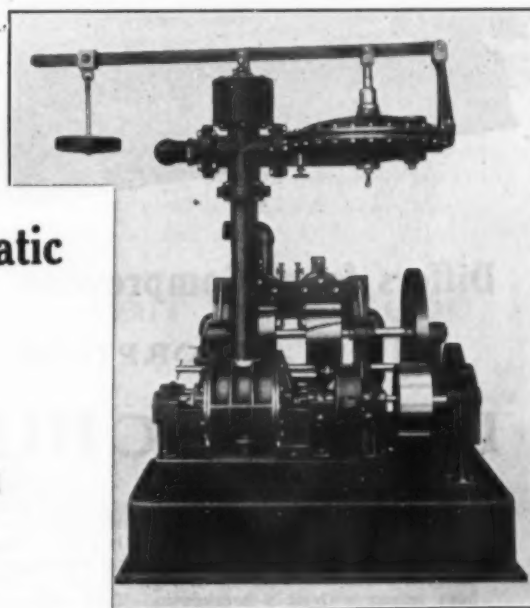
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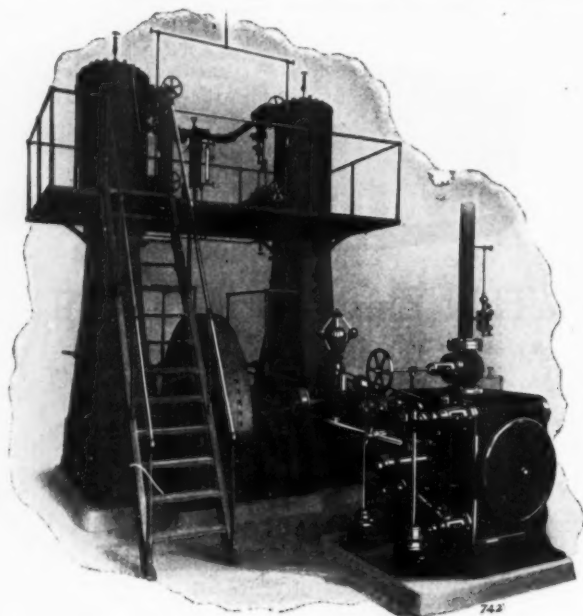
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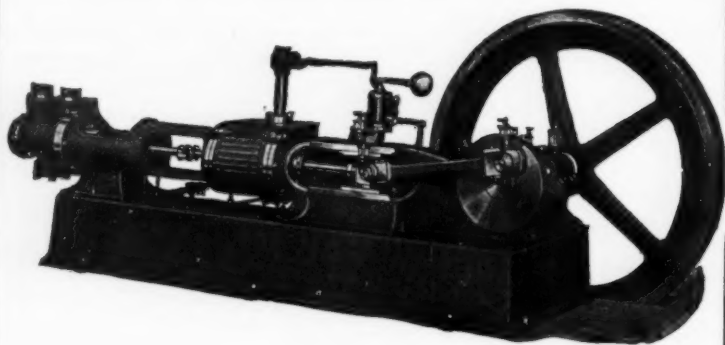
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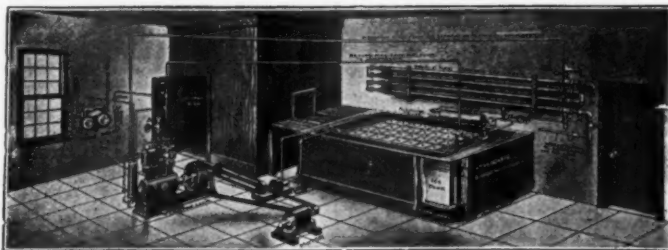
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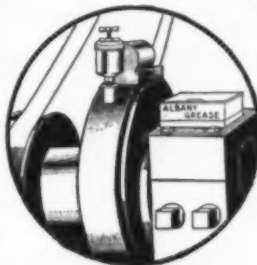
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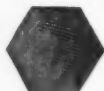
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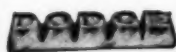
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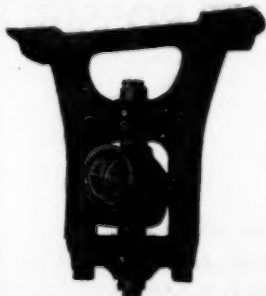
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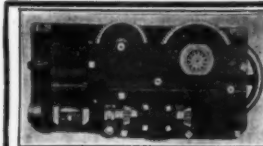


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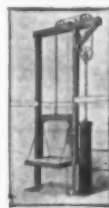
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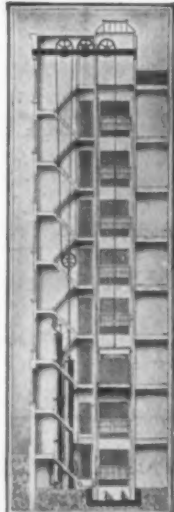


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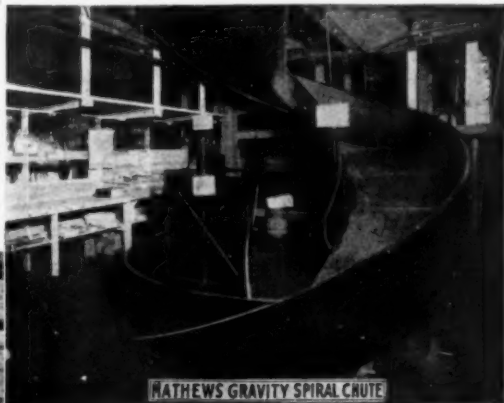
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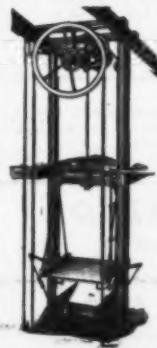
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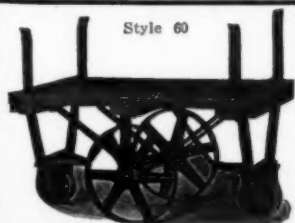
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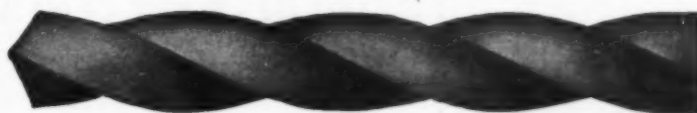
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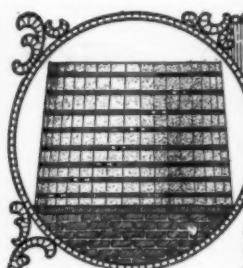
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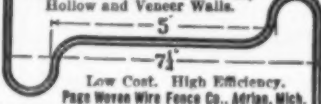
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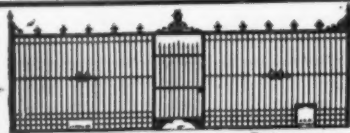
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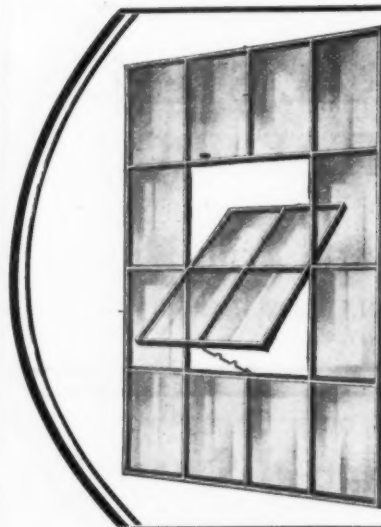
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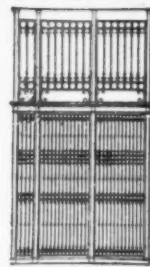
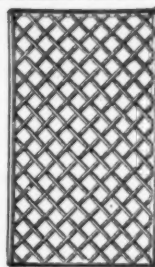
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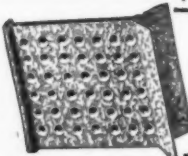
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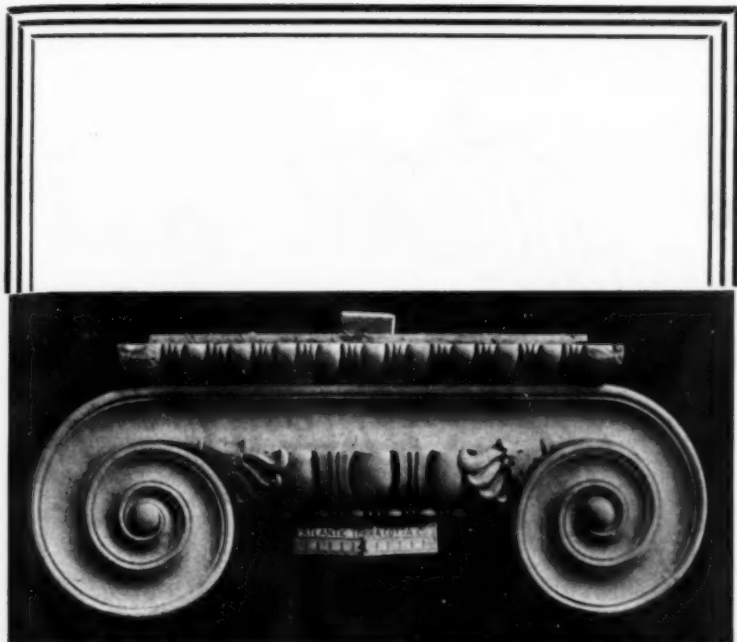
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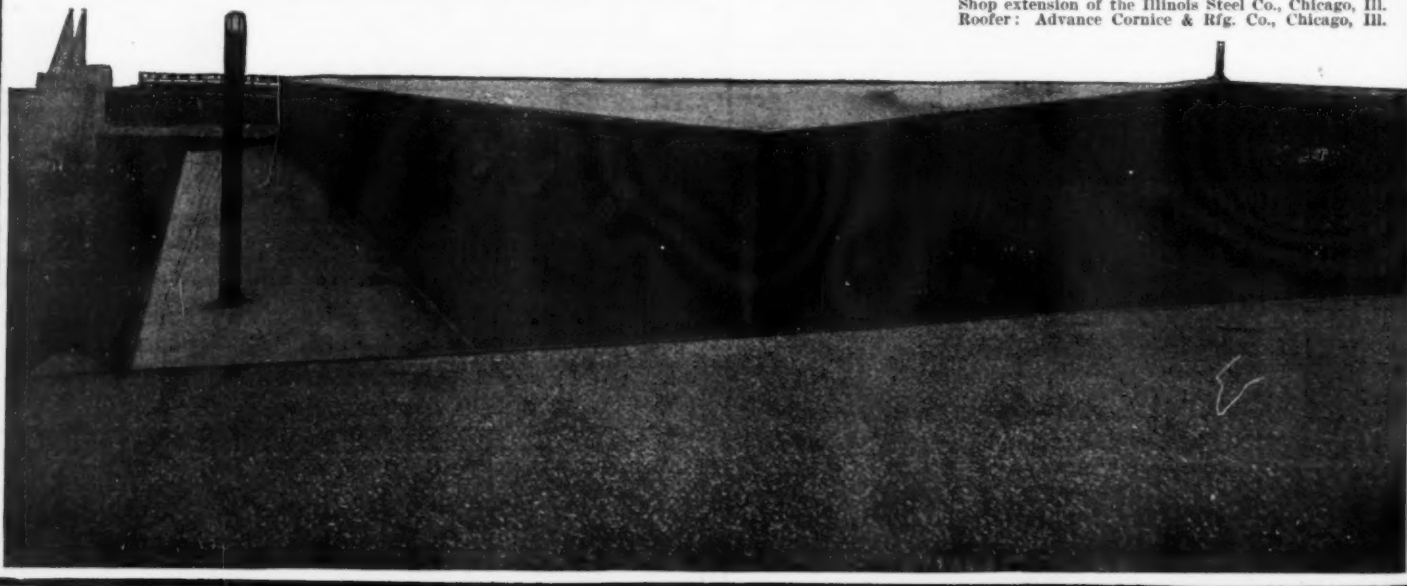
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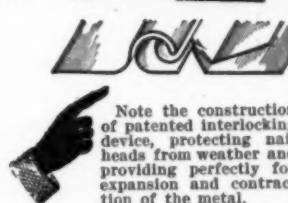
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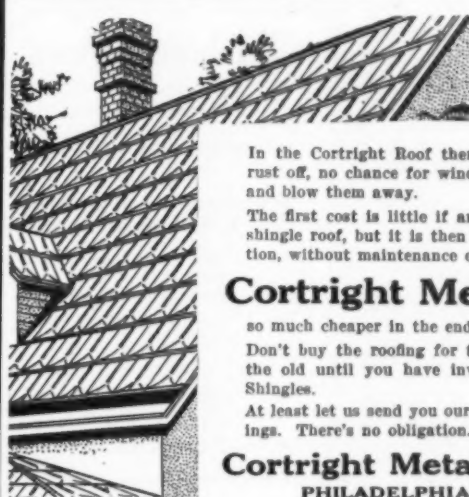
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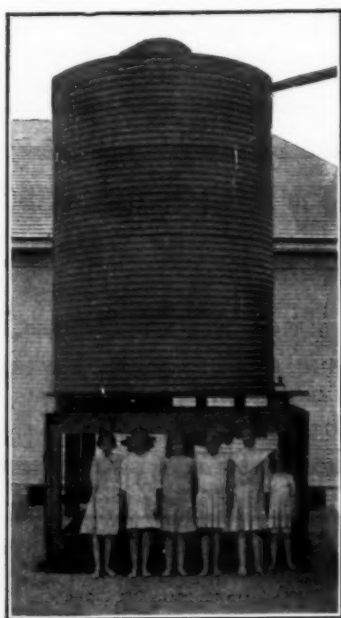
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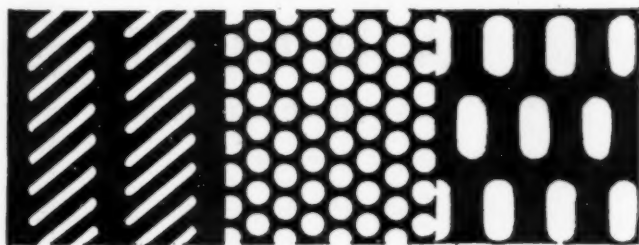
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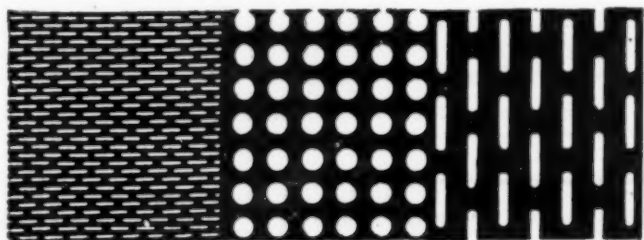
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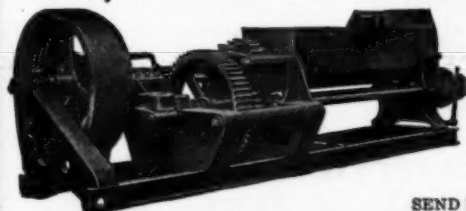
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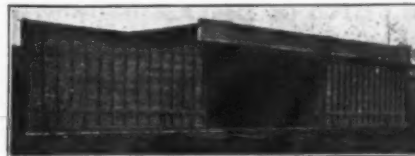
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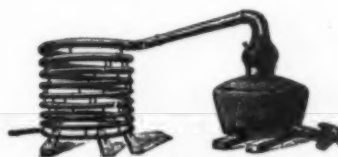
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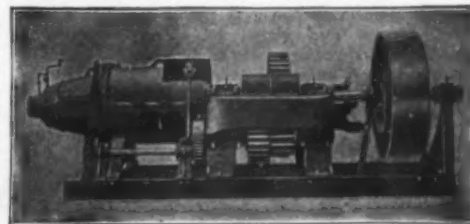
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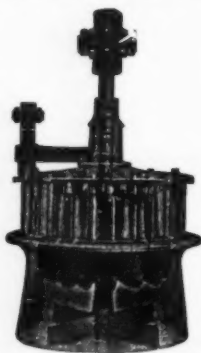
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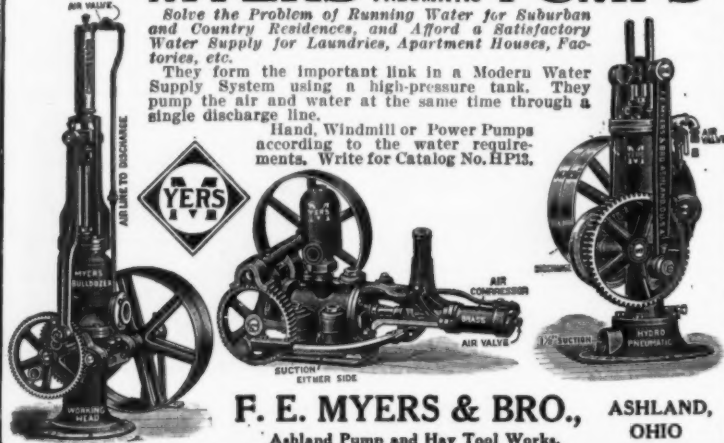


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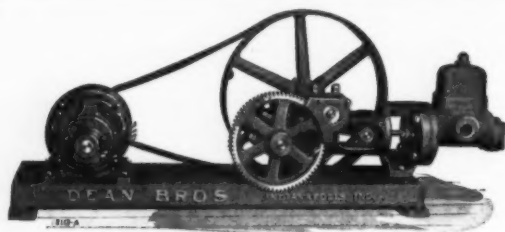
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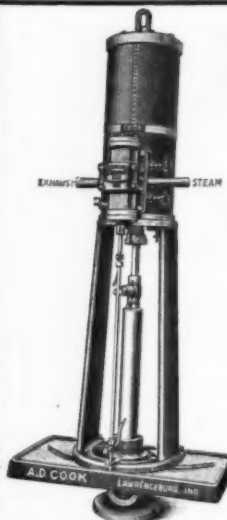
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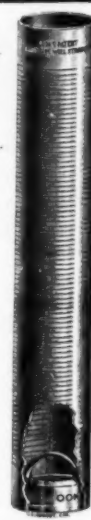
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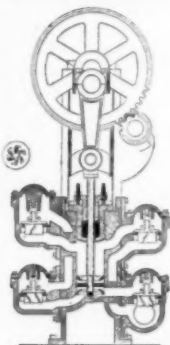
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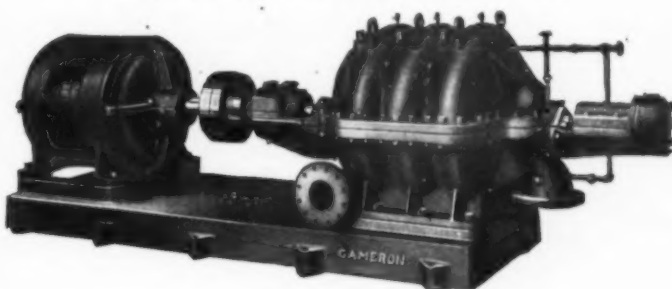
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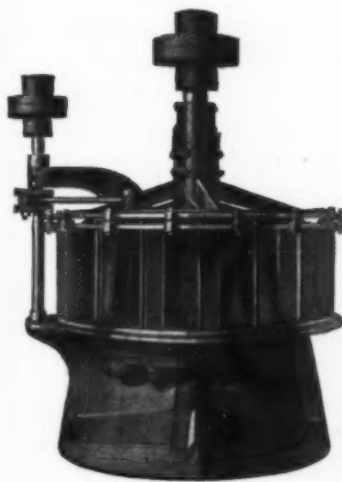
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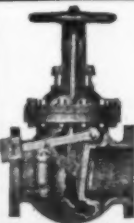
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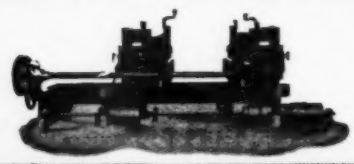
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Read the list in the Construction Department of this issue of new companies being started in the South. Can't you supply them something?

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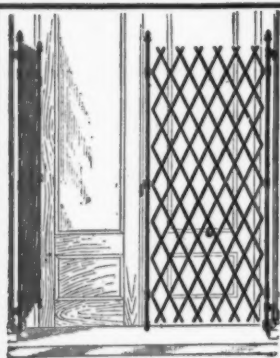
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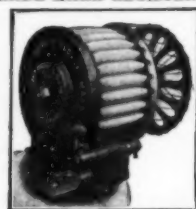
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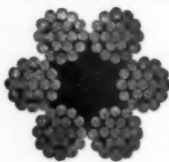


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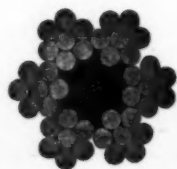


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PUBLIC ENEMIES.

If you build a line of railway over hills and barren lands,
Giving lucrative employment to about a million hands;
If you cause a score of cities by your right-of-way to rise,
Where there formerly was nothing but some rattlesnakes
and flies;

If when bringing kale to others you acquire a little kale,
Then you've surely robbed the peepul and you ought to be
in jail.

If by planning and by toiling you have won some wealth
and fame,
It will make no odds how squarely you have played your
little game;

Your success is proof sufficient that you are a public foe—
You're a soulless malefactor; to the dump you ought to go.
It's a crime for you to prosper where so many others fail;
You have surely robbed the peepul and you ought to be in
jail.

Be a chronic politician, deal in superheated air;
Roast the banks and money barons, there is always safety
there;

But to sound the note of business is a crime so mean and
base

That a fellow guilty of it ought to go and hide his face.
Change the builders' song triumphant for the politician's
wall,

Or we'll think you've robbed the peepul and we'll pack you
off to jail.

—Walt Mason, in *Journal of Electricity, Power and Gas.*

PETROLEUM IN THE SOUTH.

IN 1914 the South produced nearly half of the petroleum output of the country, and its 144,500,000 barrels were an increase of 41,320,443 barrels over its 1913 output, while the increase in the rest of the country was only 2,233,327 barrels. Comparison by separate States is made in the following table:

States.	1914. Barrels.	1913. Barrels.
Oklahoma	98,000,000	63,579,334
Texas	20,000,000	15,009,478
Louisiana	15,000,000	12,498,828
West Virginia	11,000,000	11,567,299
Kentucky	500,000	524,563
Total	144,500,000	103,179,557
United States	292,000,000	248,446,230

The mere increase in Southern production in 1914 over 1913 was 10,000,000 barrels greater than the production of the whole country in 1889, and the total Southern production in 1914 was 18,000,000 barrels greater than the whole country's production eight years before. If there had not been for a part of the year a suspension of production in some sections of Oklahoma, the total Southern production would have been much greater, undoubtedly. As it was, Oklahoma's output increased 34,420,616 barrels, the increases in other States being 5,211,475 barrels in California, 4,990,522 in Texas, 2,501,172 in Louisiana, 2,193,478 in Wyoming, 324,971 in Kansas and 39,157 in other States, an aggregate increase of 49,-

690,391 barrels. The greatest decreases were in the Appalachian region from New York to Kentucky and in the Lima-Indiana and Illinois fields. The decreases in Southern States were 567,299 barrels in West Virginia and 24,568 barrels in Kentucky, other decreases being 2,893,899 barrels in Illinois, 1,281,468 in Ohio, 963,282 in Pennsylvania, 256,095 in Indiana, 102,211 in New York and 38,799 in Colorado, an aggregate of 6,127,621 barrels, making a total increase 43,553,770 barrels.

DEADENING EFFECT OF GOVERNMENT REGULATIONS.

UNDER the heading, "Is Commission Regulation of Utilities Destined to Fail?" Moody's Magazine says:

There is a growing feeling among business men generally that the Interstate Commerce Commission is largely responsible for the desperate financial condition of the many American railways. A similar feeling is beginning to manifest itself as to the ill-effect of rate regulation by public-service commissions in many States.

From the beginning the MANUFACTURERS RECORD has never had much faith in the ultimate satisfactory working out of these various commissions, national, State or city. It has recognized that there was need for some legal restraints on corporations, and for some way of controlling them, and yet it has not seen that much would be accomplished except of a destructive character by the various commissions, beginning with the Interstate Commerce Commission. From the beginning it regarded the rate-making power given to the Interstate Commerce Commission as one of the most serious blunders made by Congress. To put into the hands of five men the power to absolutely control railroad rates over a country as vast as ours, and over 250,000 miles of railroads, is giving autocratic power to a few men over the greatest and most important business interests of the country.

Many railroad men who have given their whole lives to the study of railroad problems realize the difficulties of establishing fair rates over a single railroad when they are in touch with all of the conditions bearing on the traffic of that territory. To give to five men, who cannot possibly be acquainted with local conditions or local industries, or with the wide sweep of the country's business activities, the absolute power to make rates and to dominate the entire railroad business is an incomprehensible legislative blunder. Similar blunders have been made and are being made by States and cities in the organization of public service commissions.

It is impossible to induce men to invest largely in constructive operations if the control of the money or of the property is taken entirely from them, and if they are to be merely clerks to do the will of public officials who have provided neither the capital nor the brains needed in such undertakings. We may rail all we care to do against the unwillingness of capitalists to invest their money in such undertakings, but that will not be of any avail. The railers would not themselves invest their money in such enterprises so long as they had no control over the management or over the earning capacity of these undertakings.

The country will have to face the question as to whether it would prefer to do without new roads and new public utility enterprises generally, or whether by giving greater freedom of management and of earnings it will bring about a broad activity of construction work throughout the land. We are facing in this respect a fact, not merely a theory. To a large extent these public utility commissions are composed of men who are not at all equal either to the

creation or to the management of a great enterprise. Many of the members are politicians or mediocre lawyers whose chief aim seems to be to remain in office by cultivating the demagogic spirit of hostility to corporations, regardless of the fact that in destroying business we are destroying employment and wealth.

The new Trade Commission is, we believe, one of the most dangerous of all the commission organizations that have been brought into existence. It has powers for evil as great as those of the Interstate Commerce Commission. In these days of commissions and of ceaseless grinding of the political machine in turning out new laws, no man knows where he stands, and every man who has accumulated money hesitates to put it into constructive work of any kind. The country might as well study this situation honestly and squarely. Possibly a way may be found out of the present maze which will be fair to the public and fair to investors who provide the money and the brains for the upbuilding operations of the country. That we have not yet found the way that is fair to both is only too evident.

BETTERMENT OF COTTON SITUATION SHOULD MEAN PROMPT PAYMENT OF DEBTS.

THE steady betterment in the whole cotton situation during the last few weeks makes it possible for the South to largely overcome all of the disadvantages which it confronted in its financial and general business operations early in the season. Cotton exports to Europe continue heavy, the shipments for the two weeks ending January 15 having aggregated 583,258 bales, against 525,782 bales for the corresponding weeks of last year; and on January 15, according to the Commercial and Financial Chronicle, there were on shipboard not cleared 427,243 bales, or 200,700 bales more than for the same week of 1914, and just a fraction less than 200,000 bales for the corresponding week of 1913, indicating that the exports for this week, as most of the vessels will clear before the end of the week, will be exceptionally large.

Foreign exports have now crossed the 3,000,000-bale mark, and if all the cotton that was on shipboard on last Saturday is cleared this week, the exports to the end of the week will run to about 3,500,000 bales.

The heavy shipments abroad and active purchases at home have resulted in a gradual advance in prices from the low figures prevailing a few weeks ago, until cotton is now selling higher than at the corresponding time in 1905, and but little less than at the corresponding time in 1902 and 1903. It is selling very much above the average between 1894 and 1899, the range of middling upland at New York on January 15 this year being 8.10 cents per pound as compared with 5.75 cents on the same date 1895; 8.19 cents in 1896; 7.31 cents in 1897; 5.88 cents in 1898, and 6.06 cents in 1899, according to the Financial Chronicle figures. Since January 15 the price has still further advanced.

Notwithstanding the fact that present prices are less than the cost of production to many farmers, there is such a marked improvement over the prices prevailing during the early part of the season that the whole situation ought to rapidly change for the better. It is now possible for farmers to sell cotton and take care of their financial obligations, and honesty demands this should be done. There are many complaints that there is a withholding throughout the South of payments even by farmers who are in a position to pay, and that other people than farmers are also withholding payments that they would ordinarily promptly care for, taking advantage of the

present situation to delay payments of debts rather than making an extra effort to meet their obligations.

There was probably never a time since 1865 when it was more incumbent upon the South to meet every obligation that can possibly be met, even by sacrifice, than the present.

The financial integrity of this section demands that everyone should to the utmost of his ability meet every financial obligation promptly. The reputation of the South would be seriously injured and its prosperity retarded, and this would mean a halting of the prosperity of every individual if there should be any withholding of payment for indebtedness by debtors who can even by the sacrifice meet their obligations.

Financial honor is too delicate a thing to be trifled with, and the honor of a community or a section may be seriously hurt by the lack of honor of a comparatively few people. The honest, honorable man has to suffer often for the misdoings of others.

At this time, when it is pre-eminently important that the South should come out of this business depression with flying colors and with an untarnished reputation for commercial integrity, every man in the South should recognize his own individual responsibility, even if at great personal sacrifice, to meet any financial obligation that can possibly be met, and meet it promptly.

The complete change in the cotton situation offers the opportunity of doing this, and farmer, merchant, salaried man, manufacturer and everyone else who has his individual honor, as well as the honor of his section, in his keeping, should make the most of the present betterment in the cotton situation to strengthen the world's estimate of the South's ability to meet every emergency and to maintain its commercial integrity untarnished.

A CALL TO THE COLORS IN BUSINESS ORGANIZATION.

AFTER a year of personal initiative and productive activity as president of the Merchants and Manufacturers Association of Baltimore, Charles E. Falconer, on the eve of his re-election for another year, touched upon a trait which is not unique, but which seems inherent in business organizations generally. The burden of its criticism was that the large membership left too much to be done by executive officers and committees. Explanation of this situation is quite obvious. It is the weakness of most organizations, social, business, political or ecclesiastical, that the great body of the membership is willing to depend upon officers for the carrying out of the purposes of the organizations, and is content to limit its own activities to the payment of the expenses and, perhaps, an occasional scanning of annual reports. Most organization implies a voluntary relinquishing of a certain amount of individuality, and it is the easiest thing in the world for the sense of personal responsibility to atrophy just in proportion to the diminution in individual initiative or activity. At the same time this tendency permits the growth, deliberate or subconscious, of an inclination on the part of the really active membership, to assume, because of its very compactness, a dominating influence in the affairs of organizations. In many instances such assumption is made imperative in order to justify the existence of an organization; in others, especially where there is no vital reason for the organization, it often results in the organization being committed to policies and performances detrimental to the great body of the membership and to the community.

Ideal organization means concentration of the energies of a mass upon the prompt and effective accomplishment of objects virtually impossible if left to the undirected strivings of the individual constituents. Organization is a necessary evil wherever human society has advanced beyond the tribal stage. Without it and its implication of a certain degree of self-sacrifice on the part of individuals any gathering of men or women is likely to fly into flinders upon the slightest provocation. On the other hand, too much reliance upon the executive forces in organizations may readily degenerate into a unanimity in action equaled only by the harmony among permanent occupants of a graveyard. All human progress is the resultant of the struggle of ideas. Unor-

ganized or overorganized, the struggle becomes either futile strivings of individuals in violent personal antagonism or misdirected zeal under the dominance of selfishness. Here human progress is like that of the crab. Rationally organized, with executives heartily sustained by personal interest of the membership and wisely restrained by rules of the organizations, the struggle assumes the character of conduct based upon a due weighing of all considerations formulated into a consensus of the balanced opinions and desires of the mass. Here progress is that of the aeroplane. In the one case results are those of ochlocracy or autocracy, equal banes; in the other, results are those of self-controlled democracy.

In spite of the best intentions to the contrary, it is human nature to revert to the bales rather than to advance to the blessings. A sure prevention of this tendency is an occasional call to the colors in organizations. That call has been sounded by Mr. Falconer for his particular organization. It should stir that body of men, representing so many important material activities of Baltimore, to a sense of their responsibilities to themselves and to the community. It should be taken up in other organizations everywhere to the end that concentration of human energies may be to the lasting good of the whole body of the people.

LET'S DO A LITTLE INTROSPECTING.

COMMENTING on an article in a recent issue of the MANUFACTURERS RECORD giving some facts in regard to the financial and industrial progress of Richmond, The Herald of Spartanburg, S. C., says:

Now, what Richmond has done Spartanburg can do. This town, to be very frank with our friends and neighbors, has got everything at this very moment but the energy and disposition to do things on a big and broad scale. We are not reaching out as we should reach out after business. We need a shaking up along these lines. A town is not one bit bigger than the men who live in it. If they are narrow and quarrelsome over little home affairs, the town will just be a narrow, quarrelsome and gossiping little burg, and that will end it.

Let's stand up straight, look the field over and go after business and trade for this city during 1915.

The statements made by the Spartanburg Herald might appropriately be published in a very large proportion of the newspapers of the South. There has been a let-down in that enthusiasm which achieved great things in Southern development a few years ago. In proportion to opportunity there is not today in evidence as many signs of vim and daring to do big things as there were during the beginning of the great rebuilding and constructive period in Southern activities.

We need a new birth in the South; we need to catch a new inspiration, and we need a broader vision of the potentialities of this section if we would bring back to the South that tireless constructive energy which brought this section up out of the poverty following the war.

Have we been so smothered by the curse of politics that our initiative has been lessened?

Have we been so hampered and beaten down by the dire effects of the false teachings in governmental policies and in dependence upon philanthropy of other sections to carry forward our educational work that we are losing some of that vitalizing energy and initiative which years ago made the South the wonder of the world?

There is something the matter with us. What is it?

We are not doing our full duty nor realizing our full potentialities. Relatively, we are not doing as much nor showing such a spirit of enthusiasm and readiness to work and to achieve things as we did twenty-five years ago.

Are we working under a load of deadening politics in town, city, State and national affairs which is lessening our energy and lowering our business vitality?

Are we dragging behind us, as we try to move forward, the dead body of rotten politics, the dead body of the hatred to business success engendered by the senseless agitation of the last ten years?

Have the "uplifters" and the "reformers," so-called, in the sociological questions of the day, as well as the political agitators and demagogues who have helped to destroy our prosperity, been too great a burden for us?

Has not the time come to slough off these dying or dead members of the body politic?

Has not the time come for the people of the South to study these questions and intelligently and honestly, without regard to preconceived notions, find out what is the matter?

Let's do a little introspective work and see where we stand and then take a fresh start worthy of our Heaven-given opportunities.

PAY ROLL BETTER THAN RELIEF ROLL.

SUGGESTED by David Slusky, a successful and public-spirited citizen, and sedulously cultivated by the Chronicle, a movement is under way to provide employment for the unemployed upon a practical, businesslike basis at Augusta, Ga., so full of wisdom and gumption as to warrant duplication in other communities. The plan as outlined in the MANUFACTURERS RECORD last week turns upon an agreement looking to a general reduction in the price of building materials and directive service, and a similar concession on the part of organized and unorganized labor. After a number of conferences, material men, contractors, architects and others agreed to a reduction in their charges averaging 16% per cent., and the endorsement of the movement by the local Federation of Trades gives promise of a like reduction on the part of labor, not affecting persons now having employment, but designed to furnish work to unemployed at a satisfactory wage. President Thomas W. Loyless of the Augusta Chronicle, in a letter to the MANUFACTURERS RECORD, states that as a result of this movement there are already in prospect three new three-story brick buildings on Broad street, one or two new warehouses and a number of new residences, with the outlook for repair work and general improvements most gratifying. The MANUFACTURERS RECORD, which has been vigorously pushing for months the movement for making the most of present opportunities for building, congratulates Augusta upon its sensible program, which ought to be productive of great good, not only in that city, but throughout the country.

It is pre-eminently important that everything possible should be done to lessen the suffering throughout our land by reason of business depression. Hundreds of thousands of honest, able-bodied men are out of employment. Everything that can legitimately be done should be done to find employment for them, and in furtherance of the campaign to "Build Now" and "Do Public Work Now" the whole South should give its best thought to this serious matter.

In doing construction work now, both for individuals and for towns and cities and counties, a vast amount of good can be done by furnishing employment to people who would otherwise be idle, and at the same time secure work at a lower cost than in times of prosperity.

DOING THINGS IN WACO, TEX.

HON. J. W. RIGGINS, Mayor of Waco, Tex., and owner of "The Riggins," a new \$600,000 hotel, in a letter to the MANUFACTURERS RECORD under date of January 9, says:

For years I have valued the MANUFACTURERS RECORD as the greatest and most valuable friend of the South and a great industrial developer.

I beg to advise that, in order to get the money as quickly as possible to give employment to the labor in this city, the city will buy in the bonds voted on, as we have the money to do this.

A few days ago I wrote you of some developments in this city, which you have no doubt received ere this.

I have just built and equipped this hotel, with an investment of \$600,000, and, of course, I am showing by my acts and work the faith that I have in this country.

I shall always be glad to co-operate with you in any movement for the development of the South.

Mayor Riggins, in building a \$600,000 hotel, has given proof of his faith in his own city, and has in this way co-operated very fully in the broader development of the business interests of Waco. More than that, he is now actively leading in efforts to "Do Public Work Now" in city construction activities. It is an interesting fact, mentioned by him, that the city itself will bid in for its own account the bonds voted for municipal improvements, as it has the cash in hand available for this.

HOW NOT TO DEVELOP OUR MERCHANT MARINE.

IN a recent issue of the Iron Trade Review Mr. Ralph D. Williams gave a comprehensive review of the efforts made to develop a merchant marine in this country. He called attention to the various efforts that have been made in Congress and to the pledges by political parties which have been evaded or deliberately broken for legislation in aid of our merchant marine. In this article Mr. Williams refers to the act passed in 1904 creating a Merchant Marine Commission, consisting of five Senators and five Representatives. This commission toured the entire country from the Atlantic to the Pacific, from the Gulf to the Lakes. A large proportion of the hundreds of witnesses who appeared before the commission, it is stated, were men who had not a dollar's worth of actual interest in ships or shipbuilding, but were manufacturers, merchants and bankers who felt the need of developing new and wider markets, and who discerned clearly that such markets could not be developed without an adequate merchant marine. The net result of the investigation took the form of a bill to establish mail service to ports that were not directly reached by American ships. These new routes briefly were:

From a port on the Atlantic coast of the United States to Brazil.

From a port on the Atlantic coast of the United States to Uruguay and Argentina.

From a port on the Atlantic coast of the United States to South Africa.

From a port of the United States on the Gulf of Mexico to Brazil.

From a port of the United States on the Gulf of Mexico to Cuba.

From a port of the United States on the Gulf of Mexico to Central America.

From a port of the United States on the Gulf of Mexico to Mexico.

From a port on the Pacific coast of the United States via Hawaii to Japan, China and the Philippines.

From a port on the Pacific coast of the United States to Mexico, Central America and the Isthmus of Panama.

"This bill," says Mr. Williams, "passed the Senate unanimously on February 14, 1906, but was beaten by ten votes in the House, which at that time had a Republican working majority of 112."

The defeat of the efforts made to build up a merchant marine as thus shown must be charged to the Republican party as well as to the Democratic party. Mr. Williams adds:

In the Sixtieth Congress this bill, known as the Gallinger bill, somewhat shrunken in form, again passed the Senate, but was beaten in the House committee on postoffices and post roads. It is safe to say that had this bill been passed at the time this country would not today be in a state of wretched unpreparedness to meet the great opportunities now confronting it for the development of new markets and the exploitation of those trade connections which have necessarily been abandoned by the conflicting nations of Europe.

Bringing his review of the situation down to the present, Mr. Williams makes the following strong statements, which should be thoroughly studied by every man interested in this vitally important question:

The latest proposition that has been advanced is a Government-owned steamship line. It is beyond belief that this proposition should have been put forward seriously, but apparently it has. This measure is so preposterous as to be an affront to the intelligence of the American people.

The proposition briefly is that the Government should spend about \$25,000,000 to purchase merchant ships and operate them in the foreign field. Instead of building up an American merchant marine, that measure would effectually destroy the little we now have. Can any sensible man expect a banker to loan money to a private enterprise in order to enter into competition with the general Government? It does not appear as though this measure could have been thought out in any particular by its advocates, because the objections to it are so many and so formidable. An American ship visiting a foreign port is private property and the inevitable disputes with the port authorities are purely private affairs, but a Government-owned ship visiting a foreign port is quite another matter. Any difficulties arising take on at once an international aspect and may lead to serious international complication. The detention and search of such a ship by a belligerent nation would be a mighty serious thing, because the dig-

nity of the United States would be at stake. This measure deserves to be overwhelmingly defeated. Considered from any angle, it is bad business. It would lay a palsied hand upon our shipping. Instead of using this \$25,000,000 to purchase a lot of old foreign tonnage, the owners of which are doubtless very anxious to sell, why not use it to encourage American steamship companies to project new lines to various quarters of the globe, as outlined in the merchant marine bill that was presented to Congress ten years ago? It is safe to say that if any such distribution was made among the various steamship lines we would have an adequate merchant marine in a very little while, and that once having achieved that end, with established lines of commerce, with trade connections fixed, the ships would undoubtedly be able to care for themselves without any aid from the Government.

This question of an American merchant marine is a mighty simple one. We have simply got to look facts in the face, that's all. Our fiscal policy has placed an artificial handicap upon shipping, and it is practically impossible for the American ship to thrive until that handicap is either removed or compensated for. It is not a fair thing for this country to extend the policy of protection to every one of its industries and deny it to shipping. Secretary Root hit the nail on the head when he said that as long as we had an artificial handicap upon our merchant marine we should relieve it by artificial means. This is a protected country, and for that reason it costs more to build a ship in this country than abroad. Under our navigation laws it costs more to operate it after she is built. Ignoring these two essential facts does not cause them to disappear. They still remain. On two ships of equal size, one English and the other American, our method of figuring tonnage will rate the American as the larger and therefore impose upon her a greater burden in tonnage dues and port charges. American vessels of more than 1000 tons must carry a third mate, whether they need him or not, and must have four quartermasters, although English ships carry only two and let seamen stand the other watches. American ships must carry four licensed engineers; most foreign vessels carry only three, the donkeyman standing the other watch. American ships require three water-tenders, a rating unknown on foreign vessels, and a large number of ordinary seamen, while there are enormous differences in the wage scale.

A MANCHESTER VIEW OF COTTON ACREAGE REDUCTION.

INDIVIDUALS having the power to determine whether or not the cotton acreage in the South is to be reduced this year ought to take a few moments to consider carefully the suggestion in Cotton, the official journal of the Manchester (England) Cotton Association. In its issue of January 2, Cotton, discussing the raw cotton situation, says:

It is well known that the cotton crop is grown by thousands of planters, and it is argued that many of these and others interested in the handling of cotton, pinning their faith in an early termination of the war, will hold part of their crop or buy to hold, believing that they will be well repaid by the enhanced values which must rule later.

Until the trade is able to gauge with some degree of accuracy the likely duration of the present war, the enormous supply of cotton, the reduced consumption and financial stringency are decidedly against bullish enterprise. Therefore, a lower rather than a higher level of values seems probable.

Stability may be given the markets should the planters give some assurance that they will reduce the cotton acreage materially. Unanimity of action in the Lancashire cotton industry, the most highly organized trade in the world, is difficult to obtain; therefore, remote are the chances of concerted action among the planters of the South to reduce acreage being a success.

The organ of the Manchester Cotton Association is not a philanthropic enterprise. It is hardly to be expected to lead in any bull movement for cotton, as it represents purchasers of cotton. Nevertheless, it reveals accurate knowledge of the situation in its recognition of the difficulties in the way of concerted action by 1,700,000 cotton growers in the South, and that knowledge emphasizes the wisdom in its statement that assurance of a material reduction in cotton acreage this year will give stability to the cotton markets. Marked reduction in cotton acreage is, in fact, the sole assurance that the state of the South on August 1, 1915, will not be worse than the state of the South on September 1, 1914, as far as cotton is concerned, together with all things depending immediately upon cotton. Cotton growers of the South have the determination of this matter in their own hands. Many of them, perhaps the majority, are so situated that that vital fact can be impressed upon their minds only by word of mouth of the individuals who really decide for them every year the acreage they shall plant, the small storekeepers, the landlords and the extortionate money-lenders, the latter being the only bankers with whom hundreds of thou-

sands of farmers have acquaintance. These individuals are the ones who should be made to see the wisdom in the suggestion of Manchester Cotton. The legitimate bankers of the South are the ones to instill this wisdom.

LUMBERMEN ENCOURAGED.

Southern Pine Manufacturers Complete Their Organization at New Orleans.

[Special Dispatch to Manufacturers Record.]

New Orleans, La., January 19.

The Southern Pine Association was formally organized in an all-day session here today, 150 members signing up subscription contracts, their aggregated output amounting to more than 5,000,000,000 feet of lumber annually. A big enthusiastic mass-meeting of almost 300 lumber manufacturers heard the Association's plans explained. Charles S. Keith, president of the Association, also president of the Central Coal & Coke Co., Kansas City, Mo., was formally installed in office, as were Second Vice-President John H. Kirby, Houston; Treasurer H. M. Young, New Orleans, and Secretary and Manager J. E. Rhodes. Vice-President P. S. Gardiner, Laurel, Miss., was absent.

Headquarters in New Orleans were agreed upon, to maintain three great departments—research, publicity and forestry. The association is to sell service to the South's lumber interests. The research department is to obtain statistical information and specifications for lumber grades, and is to deal with scientific timber questions, such as timber stresses, wood preservation and fireproofing, and to make a study of the utilization of sawmill and wood waste. The advertising and publicity department is to introduce yellow pine to new trade uses. The forestry department will have consulting forester in charge to pay special attention to taxation. It will work in conjunction with other forestry associations.

Chairmen and other members of committees, numbering about 40, were named to work under a charter of Missouri.

President Keith is very optimistic. He says the Association will seek markets for yellow pine products and create many more uses for them.

Capt. John B. White, president Missouri Land and Lumber Exchange, Kansas City, feels that business is good, and will be better.

Edward Hines, Chicago, reported that after travel through the North he found improved demand for lumber, and that 1915 would see railroads and other big consumers using much more than formerly.

John L. Kaul, Birmingham, Ala., says: "Thank God the country is through the worst of it. The war is the only thing that prevented prosperity. Now let's look forward to a brighter era."

John H. Kirby, Houston, was of the opinion that the outlook for yellow pine couldn't have been worse in the past, but that now it is going to be better with an association bank of the manufacturers. Not a single discouraging note was heard from any member.

A New England View of the Business Situation

Charles E. Hellier of Boston in a letter to the MANUFACTURERS RECORD says:

"Your editorial on the ship purchase bill in your issue of January 14 is strong, fine and able, and should be printed in every newspaper in the country. I want to tell you again the splendid patriotic work you are doing, and your influence is growing and broadening all of the time. You have been very sound on the great economic questions before the country, and your consecrated service is bringing great results. * * * Things are looking somewhat better, but the country seems to be lacking in the courage to go ahead in the old-time way. I can see no reason now for holding back. Of course, some of the tariff rates are too low, but under existing circumstances that is immaterial, and the chances are good that the Republicans will be in and a revision made before any flood of foreign goods can come in. With the high price for the crops, a better feeling toward the railroads, a banking bill which furnishes ample credits on which to do business, it would seem as though we must soon have good business again in this country.

In New England some of the industries are doing fairly well on foreign orders, but the home market is still halting and hesitating. Until the people of the United States begin to buy in a normal way we can have no real prosperity."

Sugar Gossip at New Orleans.

[Special Dispatch to Manufacturers Record.]

New Orleans, La., January 19.

It is reliably reported that the American Sugar Refinery at Chalmette will reopen within two days. It has been closed since December 15. T. J. Witherspoon, the local manager, is said to have offered Tuesday to buy Louisiana sugar on New Orleans Exchange at 3.95 for 96 tests. This is the New York price. This last is quite a sensation here. Inquiry at the Exchange developed the fact that planters are not inclined to sell even at this price, hoping for better another month.

A telegram to the MANUFACTURERS RECORD from the American Sugar Refining Co., New York, says: "Indefinite when Chalmette, New Orleans, refinery will open."

Lorain Coal & Dock Co.

As lately reported, the Lorain Coal & Dock Co. of Columbus, O., has purchased and will develop 14,000

acres of coal land in Logan county, West Virginia. Details have not been determined, but are under consideration, the company's engineer, George W. Wyss of Columbus, being in charge of plans. J. W. Johnson, the company's general manager, will locate with offices at Huntington, W. Va., and have charge of the Logan county development.

Florida State Geological Survey.

The sixth annual report of the Florida State Geological Survey, E. H. Sellards, State geologist, just published, contains several papers relating to the natural resources of the State, making in all a volume of 451 pages, including two maps and 90 text figure illustrations. The subjects treated are mineral resources, lakes and lake basins, and for the northern part of the State, geographic divisions, including vegetation types.

The chapters on mineral resources, pages 21 to 114, ought to be of interest to every thoughtful citizen of the State, and of value to owners of mineral deposits, prospective investors and those who may intend to put down artesian wells. The mineral products are treated under the headings: Ball clay or plastic kaolin; brick and tile; diatomaceous earth; lime; limestone; materials for mortar and concrete; peat; phosphate rock; road materials; sand and gravel; sand-lime brick, and water supplies. This part of the report also contains some

newly-discovered facts about the geology of the Everglades.

The paper on lake basins, pages 115 to 159, describes and illustrates an interesting type of scenery which seems to be peculiar to Florida. In this connection instructions are given for draining certain of these lakes.

The report on geography and vegetation, pages 164 to 437, contains much information never published before about the topography, scenery, soils, forests and agriculture of the northern part of the State, which ought to be useful to homeseekers especially. Among other things it gives valuable hints about how the agricultural value of new land may be determined approximately by means of the native vegetation on it (the richest soils generally producing the fewest evergreens).

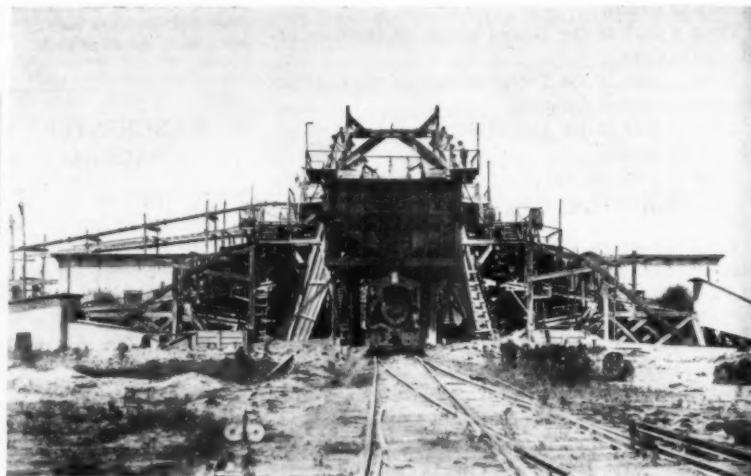
A special feature of this vegetation report is the indication by appropriate symbols in the plant index and elsewhere, of the region where each tree or other plant is most abundant, so that a person desiring a supply of any particular kind of timber or medicinal or ornamental plant can locate it without much loss of time.

The volume may be obtained as a whole if desired, although the several papers are also issued as separates. The reports published by the Geological Survey are for general distribution, and this one as well as the preceding ones, so far as the supply on hand permits, may be obtained without cost by addressing the State Geologist, Tallahassee, Fla.

INTERESTING FEATURES OF A MODERN PHOSPHATE PLANT IN FLORIDA.



REMOVING OVERBURDEN OF PEBBLE PHOSPHATE ROCK BY MEANS OF HYDRAULIC GUN.



MODERN DOUBLE WASHING PLANT OF AMALGAMATED PHOSPHATE CO. AT BREWSTER, FLA.

Illustrating the application of modern methods to the phosphate mining industry is the new plant of the Amalgamated Phosphate Co. at Brewster, Fla., concerned with the mining, drying and storing of pebble phosphate rock. In the mining of the rock the overburden is removed by means of a hydraulic gun and centrifugal pump, with the water pressure at the nozzle of the gun about 160 pounds to the square inch. The same means are employed in removing the strata of matrix containing the phosphate rock. The pumping units are portable, and are kept close to the sump hole.

The phosphate matrix is pumped direct from the mine pump to the top of the double washing plant shown herewith. Here the matrix passes through a log washer and thence over screens. This process separates the phosphate rock from sand and other foreign matter and delivers the washed phosphate rock to elevator boot. The two elevators can be plainly seen on each side of wooden bin in the foreground. This is a double washer; that is, it is two complete washers in one, which, of course, gives a large capacity and in addition practically eliminates shut-downs. This particular washing plant has a capacity of 20,000 tons per month. A large amount of water is required for mining and washing the rock. This water is supplied from five artesian wells, each having a capacity ranging from 3000 to 7000 gallons per minute.

The drying and storage plant consists of three buildings, the wet bin, mill building and dry bin. After the wet rock has been placed in wooden bin at



DRYING AND STORAGE PLANT OF AMALGAMATED PHOSPHATE CO., WITH PROVISION FOR LOADING ON CARS.

washer it is loaded by gravity into bottom dump cars, the wet bin receiving the wet rock from the rock cars. This wet bin has a capacity of 3000 gross tons even full, which is equal to about 36 hours' run of the drying machinery in mill building. The mill building is seen between the wet bin and the dry bin. This building houses and supports the machinery for drying the wet rock and elevating the dry rock. There are six rotary dryers, each having a drying capacity of about 14 tons per hour. The dry rock is delivered at top of tower into reinforced concrete tanks, from which it is chuted into "third rail" distributing cars, which distribute the dry rock into the dry bin. The dry bin has a capacity of 33,000 gross tons. Practically all of this tonnage is tributary by gravity to railroad cars on the tracks under the bin. There are four trackways under the dry bin, each having a capacity of nine railroad cars, so that 36 cars can be loaded simultaneously. All of the buildings of this drying and storage plant are of reinforced concrete throughout. The plant was constructed by the Savannah Engineering & Construction Co. of Savannah, Ga., Wayne Cunningham, president. Since September, 1911, this company has also constructed the drying and storage plant of the export company, an extension of the wet storage bin of the Prairie Pebble Phosphate Co., and an extension of the power-house of the Prairie Pebble Phosphate Co., and a drying and storage plant of the Phosphate Mining Co. at Nichols, Fla.

Marketing Securities for Public Improvements

THE PROBLEM DISCUSSED BROADLY BY BANKERS IN THE
LIGHT OF PRESENT CONDITIONS.

At the moment, when every city is studying the wisdom of doing all possible public work now in order to secure the benefit of the low cost of materials and the abundance of labor, while at the same time creating employment for men who would otherwise be idle, the MANUFACTURERS RECORD is able today to present a very broad discussion of these questions by many bond experts, bankers and others who have given close study to the marketing of municipal securities, as well as to the economic problems connected with public work. A more interesting symposium on this subject we believe has never been published. The men who have contributed to this discussion have broadly covered from many points of view the whole situation. They show that there is a growing demand for good municipal securities which will make it possible for any community which has maintained its credit in the past, and which is in financial shape to justify a new issue, to find a market for its bonds.

Many suggestions are made as to the character of bonds that should be issued. Especial emphasis is laid upon the short-term bonds for such public work as road building and street making, where rebuilding or reconstruction would probably be necessary before the expiration of long-term bonds. There is much unanimity of sentiment in favor of bonds for work of this kind being in serial form and limited in time of payment, so that the work which is done by the proceeds from them will not have been worn out before the bonds are paid off. This point is stressed with much emphasis, and it should receive close consideration on the part of all in the South and Southwest interested in the voting of securities for public work.

Caution and conservatism in the issuing of securities and in doing public work are urged by several of the writers in this symposium. They warn the South against undue extravagance in undertaking too much public work. On the other hand, a majority of these writers call attention to the fact that contract work can now be done to better advantage than for many years, and that this is the best time not only to secure good results through low prices, but also in doing this to co-operate in furthering the employment of people. One contracting firm which also handles securities taken in payment for work calls attention to the fact that in their contract work they are now getting on the general average lower prices for materials than at any time during the last 10 years, and that they are able to secure labor at \$1 a day, as compared with \$1.25 to \$1.50 a day six months ago. To this they add that the \$1 labor is producing better results than the higher-priced labor, which is doubtless due to the fact that men are so anxious for employment that they are doing more faithful work for fear that they might lose their position, realizing that there are many idle men waiting for every job. The same firm states that there is a rapid improvement in the demand in the South for its own town securities, and that even in the cotton belt small-town bonds are selling on a 5 per cent. basis to local investors, who are preferring such securities at present to investments in real estate.

Broadly speaking, these letters from men who annually handle many millions of dollars of securities show that no community of good financial standing, which has protected its credit in the past, need delay public improvements because of inability to sell securities. The market will readily take securities of good substantial communities whose credit has been maintained. On the other hand, some communities have disregarded the sacredness of credit and now find themselves unable to get money except on onerous terms, and we doubt not that there are some communities who have so disregarded financial obligations that they cannot get money on any terms which

would justify acceptance. The importance of maintaining financial credit by meeting all interest obligations promptly is emphasized by many of these writers; but no one can emphasize this fact too strongly. No community which, by reason of inefficiency of its officials or their lack of a recognition of commercial integrity, fails to meet its financial obligations to the moment can expect to stand well in the financial world. Such communities do not deserve credit and should not receive it.

Throughout the South there is a growing tendency to do all possible public work now. Wisely handled, this is worthy of all commendation. It is in line with the persistent advocacy by the MANUFACTURERS RECORD that communities should "Do Public Work Now," and that people who can afford to build should "Build Now." In this way it is possible to overcome much of the burden which the country is carrying in the hundreds of thousands of unemployed people. But even the importance of this should not cause any community to rush into ill-advised public work merely to create employment. Every undertaking should be justified from the economic point of view of the final welfare of the community, as well as from that of employment-creating work.

It is well in this connection that the whole country should give serious heed to every phase of this situation.

Every idle man is a drain on the life of the community. In one way or another every property-owner and every man who is employed are contributing to the burden of carrying the idle men. The wealth of the community is increased by employment and decreased by idleness. Looked at, therefore, purely from the economic point of view, without regard even to that higher demand of humanity to lessen non-employment as much as possible, it is incumbent upon every community to give close study to the situation and see what can be done by individuals or by communities to create employment for men who are hungry for work.

Throughout the South there is a vast amount of public work that needs to be done; roads need to be built, streets to be cut through and paved; villages and towns and cities need to be cleaned up and made to look more attractive than many of them do. Sewerage systems are needed at many points, and extensions of such systems at other places, while many other things should be done which would add to the healthfulness and the general welfare of the community. There are few towns in the South that do not need such a general overhauling and cleaning up that to do the work properly would give employment for a while at least to many of the idle men in the community. A great change for the better would come over the whole South if this time of business depression should be made a time of general improvement, of road making, of street paving, of sidewalk laying and of cleaning up unsightly and insanitary back lots and back yards, thus stimulating the community to higher aspirations for their town. Houses need to be painted, yard and garden fences put in repair, great piles of unsightly rubbish and tin cans and waste paper, an eyesore to every visitor as well as to local people, should be given prompt attention. While the South is planning for the issuing of securities for building roads and water-works and sewerage systems, and for the construction of public buildings, let it at the same time enter upon a general cleaning up and repairing campaign. Let there be a rivalry in every community, and then of every community against its neighboring communities in doing work of this kind. There never was a better time for such work, and in the doing of it a very great proportion of the men now idle could be given employment for at least a part of their time.

Every public official in the South, every taxpayer and every investor will find in the following letters from houses who make a specialty of handling municipal securities an illuminating discussion as to how

securities should be issued, as to the market for them, and of other questions connected with these matters which so vitally concern the welfare of the whole South.

An Opinion From Combined Construction and
Financing Standpoint.

THE J. B. McCRAIRY COMPANY,
Atlanta, Ga.

We are employing plenty of labor at this time in cities as low as \$1 per day, and where six months ago we had to pay from \$1.25 to \$1.50. We find that the units of production of the dollar labor at the present time is higher than for the labor employed six months ago.

We are buying material on most advantageous terms; in fact, the lowest price that we have ever bought material at—considered on the whole—for the past 10 years.

Now, regarding the financial feature, will say that up to about six weeks ago we had poor success in financing these improvements. Conditions have changed rapidly for the better, and at the present time we have an active demand for the improvement bonds of good towns, and we have a fair demand for the poorer class. Even in the cotton belt we are selling bonds of towns of 2000 or more population right here locally on a 5 per cent. basis. We find even in this territory small investors turning to municipal bonds in place of real estate or industrial investments. The people have learned that real estate investments do not always pan out just right.

We can unhesitatingly recommend to any town or municipality the feasibility of floating their securities at this time.

W. M. FARNBROUGH,
Vice-President and General Manager.

Municipalities Receiving Very Fair Prices for
Their Bonds.

BAKER, WATTS & CO.,
Baltimore, Md.

The demand for municipal bonds, as well as for most securities, was very much disturbed during the months subsequent to the beginning of the European war.

For the last two or three months, however, the demand for the better issues has been steadily increasing, until now many municipal issues are selling at practically the same prices as those prevailing before the closing of the stock exchanges.

Without undertaking to predict the course of the bond market, it seems to us, in view of all the conditions as at present existing, the price which municipalities are receiving for their bonds is a very fair one.

BAKER, WATTS & CO

Has Great Faith in Southern Towns and Counties.

TOWNSEND SCOTT & SON,
Baltimore, Md.

Referring to the possibility of disposing of bonds for road-building, street-improving, erecting municipal buildings, etc., our experience has been very satisfactory in handling such propositions in the South, where the population and debt limit warrants our doing so.

We have great faith in growth of towns and counties throughout the South. A large part of our energies have been exerted in finding county, town and State bonds that will satisfy Northern investors so as to bring as much capital to that section to develop it as we can. Even during the past seven lean years throughout the business world we have met with success in our various undertakings.

TOWNSEND SCOTT & SON.

Suggestion That Highway Bonds Should Mature
Serially.

NELSON, COOK & CO.,
Baltimore, Md.

The market for securities of the South has improved considerably within the last three or four weeks, and municipalities could at this time negotiate their reasonable requirements under conditions more or less satisfactory. We think a strong note of warning, however, should be sounded throughout the country, and particularly in some sections of the South and Southwest, on the subject of these expenditures. A great many counties in the South have, in our judgment, made a serious error in issuing large amounts of long date road bonds.

These bonds have a very much longer life than the road itself, and to our mind represent a real danger. Street-making and road-building are very commendable and laudable public enterprises, but bonds issued for such purposes should be scientifically issued, should mature serially, and under no circumstances run for a greater period than 20 years. The danger of municipal extravagance is just as serious as that of the individual. It is our opinion, however, that needed municipal improvements can be safely and economically carried on at the present time, and a market found for securities at reasonable interest rates. We would very much deplore, however, an epidemic of municipal extravagances based on the theory that labor and material is cheap, and that it is well to keep the unemployed at work by municipal expenditure.

NELSON, COOK & CO.

Market for Southern Public Securities Improving Daily.

OTTO MARX & CO.,
Birmingham, Ala.

Regarding the market for county and municipal securities in the South, we beg to advise that the market for this class of securities is improving daily. We have purchased in the last 60 days approximately \$1,000,000 of county and city bonds, mostly issued for improvements, and have disposed of the same at a fairly satisfactory price. We believe that the market for this class of securities will be better from now on.

We suggest that you use your influence in cultivating public sentiment toward the issuance of county road bonds and city improvement bonds in serial form, so that the indebtedness will be paid during the life of the improvements. This, we believe, will tend to a better credit standing of all Southern securities.

OTTO MARX & CO.

Contractors Willing to Work on a Smaller Margin of Profit.

STEINER BROTHERS,
Birmingham, Ala.

We are of the opinion that the present affords a most opportune time for making public improvements of all kinds. On account of the small amount of such work being done, not only are contractors willing to work on a smaller margin of profit, in order to maintain their organization (awaiting better conditions), but labor is cheaper and material can be purchased at a much lower price than under normal conditions.

While there has been a marked improvement in the security market during the past 60 days, it is a fact, nevertheless, that the market is still below normal. However, the concessions that municipalities and counties would be compelled to make, in selling their securities at the present market, is insignificant as compared with the saving that should accrue through cheap labor and material by letting contracts at the present time.

We would suggest, as a feasible plan for municipalities and counties to sell their securities in States where the law prohibits a sale below par, that they advertise for bids on the work for which the bonds were voted, stipulating that the contractors are to take the bonds in payment, and there is no question but that the contractors will be able to prearrange a sale of such securities at prevailing market prices.

As large purchasers of Southern municipal and county securities, we invite inquiries and correspondence from municipalities and contractors having such securities for sale.

J. M. LEVINE,

Manager Bond Department.

Maintenance of Municipal Credit to Be Conserved in Issuing New Securities.

BOLGER, MOSSER & WILLAMAN,
Chicago, Ill.

Our experience is that municipalities which have been and are carefully regarding their credit are able at this time to market securities on what we consider favorable terms, and we believe, if care were exercised in putting them out, the coming six months at least will find a firm market for such securities. We wish to emphasize, however, the fact that such sections in the South and Southwest where business conditions are bad are at this time not meeting some of their interest obligations promptly, and this is seriously affecting the market for all bonds in the South and Southwest. A special effort should be made by municipalities to see that their interest is paid promptly if they wish to maintain higher credit and secure loans on favorable terms. If they do not do so, they will necessarily have to pay higher rates for any loans they get from outside sources.

Your suggestion that cities consider carrying on improvements at this time, when labor is cheaper and materials can be secured at better terms, is a good one, but we would suggest that you add the precaution that these improvements be carefully considered and that they not only be necessary, but they may all be within the conservative taxing power of the various municipalities, and it would be poor policy to place a future burden upon the entire community for a term of years merely to relieve a temporary burden upon some of its people at this time.

BOLGER, MOSSER & WILLAMAN,

STACY C. MOSSER.

Practical Suggestions at a Timely Juncture.

KISSEL, KINNICUTT & CO.,
Chicago, Ill.

The present demand for municipal bonds is good, and prices have advanced during the past two months very materially. Municipal bonds have been in rather stronger demand than any other class of security, the demand being of such an insistent character that prices have advanced to a point showing a decrease in the income rate from one-quarter per cent. to one-half per cent. per annum, and on short-term bonds the income rate has decreased as much as 1 per cent. per annum in some cases. This decrease in income rate makes a marked advance in the selling price where the maturity date is 10 years and longer. This marked advance is due to a number of causes, the chief of which, of course, is the lowering of the interest rate charged by banks and money lenders, which has occurred markedly since the Federal Reserve Bank system became operative. In addition to this cause, however, is the disposition of investors to put out their money, whereas for quite a period after the European war started these investors declined to put out their funds at all. There has been also a decrease in the demand for money by manufacturers and merchants, due to a rather general cessation of commercial business. We believe there are only a few exceptions to this condition. It is the opinion of the writer that the cessation of the European war would quickly reverse the present situation, as the great demand for money for rehabilitation and other insistent purposes would force such an interest rate that all securities with a fixed coupon rate would be obliged to adjust themselves to the new conditions. If such should be the case, municipalities, like all other borrowers, would have to pay the going rate for their funds.

In closing, we should like to touch on some points which municipalities should consider in getting out bond issues:

1st. Interest should be made payable semi-annually (not annually).

2d. Principal and interest should be payable at some central money center, preferably New York city or Chicago, so there will be no exchange charges on collections.

3d. Bond issues should not have a long period of time between the optional payment date and the date of maturity (where an optional right is reserved).

4th. Bond issues for perishable improvements, such as street paving, road construction, etc., should not have a maturity so long deferred that the improvement would probably be obsolete or worn out long before maturity of bond issue.

5th. Bonds issued for such purpose as indicated in clause four should preferably mature serially, beginning not later than five years after date of bonds.

6th. All municipal bond issues should be sold at public sealed bid sale, and the award made to the highest responsible bidder. (This is not always done.)

We trust we have complied with the spirit of your letter, and would appreciate your favoring us with a copy of your paper containing the replies to your letter.

KISSEL, KINNICUTT & CO.,

W. R. CRAWFORD.

Low-Price Building Materials the Opportunity for Public Work.

POWELL, GARARD & CO.,
Chicago, Ill.

As far as the South and Southwest are concerned, we would advise any municipalities contemplating improvements to do so at the present time, owing to the fact that building materials are now offered at very low prices.

We, of course, recognize the fact that bonds issued by municipalities cannot be sold for as good a price as they were a few years ago. At the same time, there is very little difference now as compared with the price

obtained prior to the commencement of the European war, and when the price of material is considered as compared to the price of the bonds issued, there is a large margin in favor of the municipalities.

POWELL, GARARD & CO.,

J. C. SMITH.

Material and Labor Prices Offset Depreciation in Market Value of Bonds.

ULEN & CO.,
Chicago, Ill.

We consider the present a most opportune time for municipalities to construct their necessary work, such as road and street building, water-works, sewer systems, etc. The prices bond houses are now paying for municipal securities are not far below the average prices for the past several years, while, on the other hand, materials and labor at prevailing prices will more than offset any small depreciation in the market value of bonds.

HENRY C. ULEN.

Advices Sinking Fund in Financing Bond Issues. PROVIDENT SAVINGS BANK & TRUST CO., Cincinnati, O.

We acknowledge receipt of yours of the 8th inst., and in reply beg to state that we are of the opinion that the counties and municipalities throughout the United States would find a ready market at this time for their bonds if sold at public sale.

However, the bonds would have to bear a little higher rate of interest than those formerly issued by the counties and municipalities, for reason that the investment public are being offered very good loans, allowing them a liberal return on their investment.

However, legislation should be enacted to create a sinking fund to pay off principal and interest, or the bonds be issued in serial form, as this requirement is being demanded by the dealer in municipal securities.

It would also be advisable for the different counties and municipalities to have their bonds approved by some recognized attorney before offering them for sale, which would expedite the delivery of the bonds by giving the county and municipality immediate funds with which to make their improvements.

We will be pleased to have you call our attention to any county or municipal loans that require financing, and same will have our immediate attention.

JULIUS A. REIF, Manager Bond Dept.

High Rate Bonds for Smaller Communities Advocated.

WEIL, ROTH & CO.,
Cincinnati, O.

There is no disputing the fact that labor and material at this time are much cheaper than in times of activity. Within the past few days we have been reviewing recent sales of bonds by municipalities, and, although prices are somewhat lower than those which prevailed before the trouble abroad arose, there is not so great a distinction as one might be disposed to think. The difference is more than equalized by the employment that would be furnished, together with the comparatively low prices of labor and material now obtaining.

We have found a very satisfactory demand for high-grade municipal bonds, and the larger municipalities apparently are experiencing no difficulty in disposing of their securities, provided a reasonable rate of interest is offered. The demand for the lower grade issues as yet is rather limited, but we believe that this is caused particularly by the fact that no attempts have been made by such municipalities to dispose of bonds at what might be considered current rates, and those lower-grade issues held by dealers which were bought prior to July 30 last are being retained with the hope that conditions later will permit of a sale without a loss. It seems as if the vast majority of the smaller municipalities cannot realize the necessity of paying rates of interest higher than those which prevailed before the European war was declared. The metropolitan cities of the country need no advice in the matter of the disposition of their securities, as they are generally informed as to just what is necessary in order to permit an issue to meet with success, but it would be well to advocate the issuance of high-grade bonds by the smaller communities.

We do not imagine that any municipality of reasonable size would have any difficulty in disposing of a 6 per cent. bond of fair life (say, 15 or 20 years) at par and interest or better. It is very necessary, however, in all cases to provide for the payment of principal and semi-annual interest at some bank in the city of New York. In some instances it might be even possible to market

a 5½ per cent. bond, wherever the laws will permit. It would be well not to determine the rate of interest absolutely, but solicit bids for bonds bearing a rate of interest not exceeding 6 per cent. This procedure would insure a sale at the lowest possible rate.

WEIL, ROTH & CO.

Fifteen Years as a Maximum Life for Road Bonds
THE TILLOTSON & WOLCOTT COMPANY,
Cleveland, O.

At the present there is an active market for good municipal bonds, and prices are good, when all conditions are considered.

There appears to be a disposition to utilize the present situation for doing public work. Especially is this so in the South, where climatic conditions permit work at any time of the year. The vast amount of public work that is now contemplated brings to mind the ever-recurring problem of the extravagance of American municipalities, and I think that your publication could do a great deal of good if it would editorially oppose extravagance. You could also do a good deal of good by opposing the policy of Southern municipalities in issuing long-time road bonds. As you know, many of them have outstanding road bonds running for 40 years, and I think that everyone would agree that the kind of roads now being built will not last anywhere near that length of time. It is the judgment of a good many investment bankers of experience that 15 years should be the maximum length for road bonds, and that they should be paid in annual instalments.

E. G. TILLOTSON, President.

Favorable Constitutional Amendment Voted in Arkansas.

GUNTER & SAWYERS,
Little Rock, Ark.

Speaking of Arkansas securities only, the prospects for 1915 appear to us as very favorable.

During many years the cities of this State have been handicapped because of a constitutional provision preventing the issuance of municipal obligations, or bonds protected by a direct tax on the whole properties of incorporated towns. We have been forced, therefore, to improve our cities by the creation of special improvement districts, and to offer only for such improvements those bonds classed as special assessment bonds. For some reason which we confess as being unable to understand, our special assessment bonds, although issued at a high rate of interest (usually 6 per cent.) have in most every instance been sold to dealers at less than par. The dealers explain that their investors are prejudiced against this class of security.

In our own experience we have never known a default in Arkansas special assessment bonds, and we believe that the time will come when this class of security will be in demand because of the principle which makes each particular piece of property and each particular district bear an equitable and certain per cent. of the cost and improvements of such district, and this tax is the first lien on such property. It is enforceable, can be collected, and where there is a special commission appointed to assess the special benefits against each piece of property, red tape is avoided and the commissioners can act promptly and decisively.

The writer finds it useless, however, to argue the stability of our special assessment bonds, and I am departing somewhat from your line of inquiry in dwelling on this subject. Returning to the matter in hand, our reason for optimism as to Arkansas securities for 1915, will say that after strenuous efforts on the part of officials of numerous cities of this State, people at the election in November voted for the adoption of an amendment to the Constitution of this State permitting cities of 1000 population and over to issue bonds, such to be voted and to be a direct tax bond.

Numerous inquiries from dealers throughout the country have reached this office in connection with the amendment, and we anticipate that many of our Arkansas cities will take advantage of the privilege afforded.

This office sells to dealers only, and our opinion as to the market conditions are governed largely by the demand on the part of the dealers. We do not come in touch with the investors.

Replying to that particular part of your letter in which you ask for suggestions as to the issuance of securities for public improvement, advise that we are opposed to the issuance of long-time bonds or bonds extending over a period of 15 to 20 years for road improvement, drainage, levee or street improvement bonds. We

see no objection to longer term sewerage, school or bonds where there may be a direct income other than tax, such as electric-light and water-works bonds. We are opposed to a provision in any law which requires that any certain class of bonds be sold at a certain rate of interest and at not less than par. This latter is one of the provisions of our recently adopted amendment, but was the best that could be done at this time. The value of securities depends upon the demand. Bonds should be as any other commodity, and we should not restrict by laws and govern or try to govern the sale price. Such bonds are forced into the hands of the contractor, who, of necessity, increases his estimate in order to meet a possible loss in the disposition of the security. The contractor is not, as a rule, a dealer in bonds. He is afraid of the bonds, and adds to his estimate more than sufficient to cover the loss. Therefore should the cities dispose of the bonds at the best market price, realizing cash with which to pay the contractor. In this way the cities would gain materially.

By all means we think it desirable that bonds from municipal improvements be disposed of during those months when other public work cannot be secured. Especially is this true in the South at this time, because of the South having suffered as a result of the European war to so much greater extent than any other part of this country.

The writer has, unintentionally, written you at much greater length than he intended. Hoping, however, that some of the suggestions made may be of service to you, I am,

G. B. SAWYERS.

Highway Issues Should Be Based Upon an Intelligent Scheme.

W. N. COLER & CO.,
New York, N. Y.

The questions raised are very broad, and of great interest, and we have noticed recently considerable discussion in public print in relation thereto.

We believe that now, and for some time to come, economy in public expenditures should be rigidly practiced by all authorities. Perhaps labor and material are cheap at present, and the means for furnishing employment to idle people affords us a pleasant opportunity to do good; but are not the benefits derived therefrom more than offset by the increased and increasing burdens of the taxpayer? A market for municipal bonds (when we use the term "municipal bonds" we include issues by State, county, city and district authorities) may be had on such as are made by communities of good financial standing and record, but the supply of public securities for the last five years has been far in excess of the demand, and this excess is increasing.

With the investor, bonds issued for municipal buildings, such as city halls, courthouses, jails and schools, are favored in preference to those issued for street paving or highway construction; yet the States are flooding the country with highway bonds, and seem to be willing to pay any rate of interest at which the bonds can be marketed. In some States, where the rate of interest is restricted, the contractor knowing that he will have to take the bonds in payment at par, appraises their value and includes the difference between their par and market value in the amount of his construction bid. The moral of this and the loss to the taxpayer is obvious.

New construction of public roads should be most cautiously considered from every viewpoint before launching into a hastily conceived campaign. All States should have a perfected plan of trunk highways and branches or feeders, so the construction in one locality should round out and harmonize with the general plan for the beneficial services of the public as well as the local users. Legislatures should have a system of intelligent study and the help of reliable and experienced engineers, only enacting statutes authorizing these highway issues after having an intelligent scheme worked out and incorporating such restrictions as to meet the general welfare of the public.

Too often it appears as if construction of roads is for the temporary relief of political partisans, serving only small local conditions, defective in construction and lasting only a few months, while the bonds of this capital raised to pay for the work run 30, 40 or even 50 years, and owing to inferior work it may be found necessary to reconstruct the same highway several times during the life of the primary issue of bonds, all of which is, of course, wrong. In our Eastern States we have for some time been making bonds issued for street paving payable serially, and the average life is from 5½ to 10½

years. This is as it should be, but the majority of the bonds authorized by Southern and Southwestern States for public highways are usually issued for straight long terms.

Our advice is to counsel your readers to preserve moderation at present and for some time to come with all new plans for public expenditure.

W. N. COLER & Co.

An Excellent Time to Undertake Public Improvements.

ESTABROOK & CO.,
New York, N. Y.

We believe the present to be an excellent time for municipalities to undertake public improvements, as the demand for municipal securities today presents an advantageous opportunity to sell bonds. Such bonds are selling in the market today at prices to yield a 4.10 per cent. to 4½ per cent. basis, according to the size and strength and locality of the municipality.

ESTABROOK & Co.

The Disposition to Take Advantage of Low Prices a Wise One.

R. M. GRANT & CO.,
New York, N. Y.

We think the disposition which you say exists throughout your country to take advantage of the present situation for the making of public improvements of various kinds, including road-building, street-making and the erection of public buildings, thereby getting the benefit of low prices on labor and material, is a wise one.

There is at this time a reasonably good market for the bonds of the larger cities and counties, those having a substantial assessed valuation and population, and we are always ready to furnish money for public improvements to those cities, counties and smaller political subdivisions, including districts which have adequate paying power, as shown by their ratables, population and industries.

We would be glad to have the municipal officials charged with the raising of money for such improvements, communicate direct with us before issuing their bonds or when the projects are in process of consideration, but before they have taken concrete shape.

The managers of our New York office, at 31 Nassau street, or our Chicago office, at 111 W. Monroe street, would be glad to confer with municipal, county or other officials, or with the contractors who are taking the bonds in payment for their work, and give them such information with regard to values of such bonds and the market as in our power lies.

R. M. GRANT & Co.

Conditions Possible for Favorable Contracts for Municipal Work.

HARRIS, FORBES & CO.,
New York, N. Y.

There is no doubt that the present conditions, particularly in the contracting business, are such as to make it possible for municipalities to make very favorable contracts for municipal work, and as the market for high-grade investment securities, particularly municipal bonds, has so far adjusted itself as to permit municipalities disposing of their securities at reasonably good prices, there would seem to be no reason to delay needed public improvements.

By the above we do not wish to be understood as recommending municipalities to make improvements which are not urgently needed, for, in view of the general industrial conditions, we believe it to be a time for economy, both public and private.

As you know, we are in the market at all times for municipal bonds of a desirable character which are issued without objectionable restrictions upon the power to create sufficient taxes to meet the bonds, interest and principal as they mature.

HARRIS, FORBES & Co.

The Federal Reserve Banks Can Play an Important Part.

HARVEY FISK & SONS,
New York, N. Y.

We are inclined to think counties and municipalities could sell their bonds at the present time at fair prices, and we see no reason why they should not proceed to arrange for betterments and improvements in the full expectation that they can secure fair prices for the bonds which they may desire to issue. The interest rate must, in our judgment, necessarily range somewhat higher than in past years. At the present time there is no more popular class of security in the market than

municipal bonds. We do not find, however, that long-time bonds, issued for road purposes, are popular with investors, as the roads, under our present poor methods of management, are apt to wear out long before the bonds are retired. In all cases it is desired to finance for roads we would advise that it be done on a serial basis, and that provision be made for the maintenance of the roads from taxation at the same time that bonds are issued for purposes of construction.

In view of the permission given to the Federal Reserve banks under the new banking law, to purchase short-term notes of municipalities, we are of the opinion that considerable of the financing in the future of the more important municipalities for purposes where the debt had to be retired from taxation over a relatively short time, can be done to advantage by arranging to sell notes expiring at six months' intervals, somewhat in the nature of car trust bonds. The purchasers of these notes would then be in a position to find a market with the Federal Reserve banks from time to time as the notes approach maturity. We believe that it would be very much to the interest of all municipalities to adopt the policy which has recently been inaugurated in New York city of only issuing long-time bonds for improvements of water-works, school purposes and bridges and other important structures, and to finance things which wear out and become obsolete in a short time as far as possible by taxation, or in any event, with short-term notes or bonds which will mature within the life of the improvement for which they are issued.

HARVEY FISK & SONS.

Massachusetts' Model Regulations of Bond Issues.
NEW YORK LIFE INSURANCE CO.,
New York, N. Y.

The practical cessation of the sale of municipal bonds, occasioned by the first stages of the European war and the resulting chaotic condition of the money markets of the world, has been followed by a gradual return to normal conditions in the bond market through the adjustment of foreign exchange, the reopening of the marts of commerce and the inauguration of the system of Federal Reserve banks in this country.

With the return of confidence and the accumulation of money at the centers, there has been an active and increasing demand for municipal investments, and the present seems an opportune time for municipalities to again issue bonds for necessary improvements, especially for the construction of public works that will aid the unemployed; but in so doing the interests of the taxpayers also should be carefully considered and conserved, to the end that they may not be compelled to pay a greater sum for necessary improvements than is dictated by sound business judgment.

In this connection, one cannot perform a better service to municipalities proposing to issue bonds in considerable amounts than to call attention to the act relative to municipal indebtedness passed by the Massachusetts Legislature in 1913, and which took full effect January 1, 1914.

In his fifth annual report, Hon. Charles F. Gettemy, director of the Massachusetts Bureau of Statistics, states that this law "is probably the most advanced of that of any State of the Union." As information, therefore, of probable interest to municipal officials reached by the MANUFACTURERS RECORD, to whom it might not otherwise be readily available, I shall venture to quote at considerable length. Commenting upon this legislation, which is the result of exhaustive research, Mr. Gettemy reports in part as follows:

"The outcome of these several investigations has now been embodied in 16 acts, the result of a careful preliminary, scientific diagnosis of conditions, and I doubt whether any State can show an instance of legislation more thoroughly predigested than that which, without a dissenting vote in either branch of the Legislature, has just been placed upon the statute-books of Massachusetts for the purpose of restricting and regulating the incurrence of municipal indebtedness in accordance with sound financial principles. * * * Without undertaking a digest of these several enactments, since it is our intention to publish them separately in text form, it seems appropriate at this time to review briefly certain of the principal features of the new municipal indebtedness act, which will make many radical changes in the conditions under which the cities and towns of the Commonwealth may hereafter incur debt, giving to Massachusetts, indeed, a law upon this subject which is probably the most advanced of that of any State of the

Union. In its more important aspects this new legislation seeks to strike at four fundamental evils of municipal financial administration, namely: (1) The incurrence of funded or fixed debt for current expenses; (2) temporary borrowings to a practically unlimited amount in anticipation of tax collections; (3) the diversion of the principal of trust funds to current expenses or other purposes not contemplated by the donor, and the incurrence of other liabilities without providing properly for the payment of the same, and (4) the neglectful and costly management of sinking funds."

As the subjects treated under numbers 1, 2 and 3 are not of primary importance in this article, they are eliminated on account of restricted space.

"(4) The Inefficient Management of Sinking Funds. It was once said that the way to resume specie payments was to resume, and the way to stop the abuses of the sinking-fund method of paying municipal debt caused by ignorance and inefficiency and to remedy its wastes is to stop the further establishment of such funds. This is the very simple and effective remedy which has now been applied in Massachusetts. The Commonwealth itself set the example a few years ago, and since then all State bonds have been issued and made payable by the serial method; several of our cities and towns did likewise and the process is now to be hastened by the prohibition of any further creation of sinking funds and the requirement that all debt shall be issued in accordance with the serial plan. The serial payment provision of the law requires municipalities to provide for the payment of all except temporary loans 'by such annual payments as will extinguish the same at maturity, and so that the first of such annual payments on account of any loan shall be made not later than one year after the date of the bonds or notes issued therefor, and so that the amount of such annual payments in any year on account of such debts, so far as issued, shall not be less than the amount of principal payable in any subsequent year, and such annual amount, together with the interest on all debts, shall, without further vote, be assessed until the debt is extinguished.'

"I have explained above the method devised for putting a stop to borrowing for current expenses was to extend the list of authorized specific purposes for which fixed or funded debt might be incurred, and to prohibit borrowing for any other purpose. But aside from this important negative object, this portion of the new law is a piece of constructive legislation noteworthy on its own account, since it is an attempt at a comprehensive statutory classification of municipal indebtedness. It will be of interest, therefore, to enumerate in this connection the objects for which the municipalities may henceforth borrow in Massachusetts. These authorized loans are of two general classes, those which may be made within the limit of indebtedness fixed by the law, viz., 2½ per cent. of the average valuation of the three preceding calendar years in cities and 3 per cent. in towns, and those which are exempt from this limitation. The former are 15 in number (instead of six, as in the old law), and, with the periods for which they may run, are as follows:

"(1) For the construction of sewers for sanitary and surface drainage purposes and for sewage disposal, 30 years.

"(2) For acquiring land for public parks under the provisions of chapter 28 of the Revised Laws and amendments thereof, 30 years.

"(3) For acquiring land for and the construction of schoolhouses or buildings to be used for any municipal or departmental purpose, including the cost of original equipment and furnishing, 20 years.

"(4) For the construction of additions to schoolhouses or buildings to be used for any municipal purpose, including the cost of original equipment and furnishings, where such additions increase the floor space of said buildings to which such additions are made, 20 years.

"(5) For the construction of bridges of stone or concrete, or of iron superstructure, 20 years.

"(6) For the original construction of streets or highways or the extension or widening of streets or highways, including land damages and the cost of pavement and sidewalks laid at the time of said construction, 10 years.

"(7) For the construction of stone, block, brick or other permanent pavement of similar lasting character, 10 years.

"(8) For macadam pavement under specifications

approved by the Massachusetts Highway Commission, 5 years.

"(9) For the construction of walls or dikes for the protection of highways or property, 10 years.

"(10) For the purchase of land for cemetery purposes, 10 years.

"(11) For such part of the cost of additional departmental equipment as is in excess of 25 cents per \$1000 of the preceding year's valuation, 5 years.

"(12) For the construction of sidewalks of brick, stone, concrete or other material of similar lasting character, 5 years.

"(13) For connecting dwellings or other buildings with public sewers, when a portion of the cost is to be assessed on the abutting property-owners, 5 years.

"(14) For the abatement of nuisances in order to conserve the public health, 5 years.

"(15) For extreme emergency appropriations, involving the health or safety of the people or their property, 5 years."

The second class of loans, those which may be incurred outside the general limit of indebtedness prescribed by the law, are:

"(1) For temporary loans in anticipation of revenue * * * or a loan in anticipation of a bond issue, 1 year.

"(2) For establishing or purchasing a system for supplying the inhabitants of a city or town with water, or for the purchase of land for the protection of a water system, or for acquiring water rights, 30 years.

"(3) For the extension of water mains and for water departmental equipment, 5 years.

"(4) For establishing, purchasing, extending or enlarging a gas or electric-lighting plant within the limits of a city or town, 20 years; but the indebtedness so incurred shall be limited to an amount not exceeding in a town 5 per cent. and in a city 2½ per cent. of the last preceding assessed valuation of such town or city.

"(5) For acquiring land for the purposes of a public playground, as specified in section 19 of chapter 28 of the Revised Laws and amendments thereof, 30 years; but the indebtedness so incurred shall be limited to an amount not exceeding one-half of 1 per cent. of the last preceding assessed valuation of the city or town.

"It is furthermore provided that all debts, except on account of temporary loans, whether incurred within or without the debt limit, so-called, may be authorized only by a vote of two-thirds of the voters present and voting at a town meeting in towns, or of two-thirds of all the members of a city council or other governing body in cities, and subject to the approval of the mayor, if such approval be required by the charter. What to include in such a list of authorized loans, of which all municipalities were to be permitted to take advantage, and what to exclude, and the proper periods for which loans of different classes should be allowed to run gave rise to much discussion by the Bureau of Statistics, the legislative committees and the administrative officials of the cities and towns. Naturally enough, numerous municipalities, viewing the situation from the standpoint of their own needs or desires, wished to have included among the authorized purposes of municipal indebtedness various objects which, while meritorious as affecting their own particular cases, would be unsafe to incorporate into a general law; on the other hand, there were extremists—well-meaning and thoroughly competent financial administrators, but with opinions based upon a restricted experience acquired under perhaps exceptionally favorable conditions—who would have made the provisions of the law so rigid that it would not only have been quite impossible to carry them out in numerous instances, but grossly unjust to have even attempted to do so. There were also, of course, some differences of opinion as to the proper length of time for which debts of various kinds should be incurred. Yet, underneath all these inevitable and natural differences there was discernible on the part of the members of the committee of the Legislature, the local officials, and all who took part in considering the subject, not only a practically universal appreciation of the fact that existing conditions were such as to demand immediate and comprehensive remedial legislation, but a corresponding wholesome disposition to yield personal opinion and theories in the interest of the general welfare. Nevertheless, I think I am entirely safe in saying that, notwithstanding the magnitude, importance and technical nature of the subject, and the compromises in matters of detail which characterize all reform legislation, the law as finally passed not only involves no sacrifice or substantial

modification of any vital principle of sound municipal finance, but, on the contrary, represents the embodiment into our statutes of certain of the most fundamental of these principles."

In closing, attention may properly be called to the practice of many municipalities of making the interest and principal of their bonds payable at a local bank. If made payable at an exchange center, such as New York city, the bonds would have a wider market in which they could be sold, would be more readily negotiable, and would command a higher price at the initial sale. The MANUFACTURERS RECORD will aid Southern municipalities in the sale of their securities by driving this fact home.

All bond issues that are so prepared as to afford the maximum of security and negotiability in accordance with the best municipal practice will usually find a ready market even in times of ordinary depression and distrust.

CHARLES F. CUSHMAN,
Manager, Municipal Bond Department.

For Serial Bonds in Denominations of \$500 and \$100.

BOWMAN, COST & CO.,
St. Louis, Mo.

It is our firm conviction that the present offers an unusual opportunity for public financing of almost every character where that financing is justified by the requirements.

Low prices for material, an abundance of labor at reasonable costs and a freer market for credit is a combination of circumstances, in our opinion, which offers a situation which should be welcomed by public officials.

Despite the fact that we shall probably have a number of important foreign loans at high interest rates in the next year, the fact should not be overlooked that these obligations will in many (if not all) instances be of the short-term variety, and that the resources of the belligerent nations (as well as of neutrals) have not been exhausted to the point necessitating the placing of long-time bonds at excessively high interest rates.

Where all of the legal requirements have been met and the physical and other conditions justify, we believe that the larger communities will have no difficulty in persuading investment bankers of the feasibility of their projects. We would utter only a note of warning to those cities which have been injecting the word "utility" too often into their enterprises. We also believe that the serial form of bond, issued in denomination of \$500 and \$100, will enable the community to reach (through the investment banker, of course) a new and growing constituency, and thus popularize on the best terms its own permanent credit.

BOWMAN, COST & CO.

Some Municipalities Proceeding With Extreme Caution.

MISSISSIPPI VALLEY TRUST CO.,
St. Louis, Mo.

We are finding a fair market for municipal securities at this time, but the demand is not as large as it was just prior to the first of the year. However, there seems to be quite a brisk demand among dealers for the purchase of new issues, although the cotton States are not meeting with much success in selling their securities at high prices.

Among all municipalities in our territory it would seem that they are proceeding with considerable caution in regard to making new expenditures, and in many cases they are spending considerably less money for schools and other improvements than they would under normal conditions.

JOHN R. LONGMIRE,
Assistant Bond Officer.

Exemption From Federal Income Tax a Favorable Factor.

SECURITY TRUST CO.,
Spartanburg, S. C.

Regarding Southern municipal bonds especially, we have found an active market for bonds during the last few months. It is true that some concessions in price have been made, but we have had no lack of demand from our customers for good securities. As State, county and municipal bonds are usually tax exempt and free from the Federal income tax, and as the European war has not affected these securities in the same way as those traded in on the various stock exchanges, we believe that there will be a growing demand for bonds even at higher prices.

W. S. GLENN, President.

RESELLING PUBLIC BONDS.

A Discussion of the Difficulties Experienced in Present Conditions.

Editor Manufacturers Record:

Knowing that you take an active interest in all matters relating to the progressive welfare and affecting the vital interests of the South, I have been prompted to ask your opinion on a matter that concerns this immediate section—several counties in the northeast prairie region of Mississippi.

Measures for the relief of the cotton situation do not promise relief, either immediate or remote. After all, the matter of cotton values seems to have reverted with a jolt to the basic principle of supply and demand. There is this modification, however, of that principle in the present instance: While the law of supply and demand usually operates in all fairness to all affected, from producer to consumer, its operation is now greatly retarded, to the serious injury of the producer, by the impairment or removal of transportation facilities. Hence other measures of relief must be sought.

An unprecedented era of progress and improvement had come to this immediate section, several counties in Northeast Mississippi, just before the breaking out of the war. Something like a million dollars in 5 per cent. road bonds and 6 per cent. drainage district bonds have been issued in this area in the last few years. The 5 per cent. road bonds have readily found their way out through the usual channels, being taken in most instances by brokers and bond bankers of the Northern and Eastern cities. The drainage bonds, bearing 5 per cent., have been usually bought by local capital and held as a most desirable investment.

It is with a view of securing information, or such suggestion as you can give, that will be helpful in reselling the drainage bonds, and some of the road bonds, that I am writing you. Such drainage bonds as have been sold to outside parties have generally gone, I believe, to New Orleans. But with the present tie-up of cotton we consider that port now closed to such negotiations.

I have taken this matter up with Mr. M. A. Saunders, a prominent local attorney, who from experience has a pretty thorough technical knowledge of all proceedings leading to the issuance of such bonds. In each instance, before sale, these bonds have been submitted, with all proceedings in connection therewith, to such expert attorneys as Messrs. Wood & Oakley of Chicago, and have been duly approved as to legal regularity.

Only stress of the present financial situation would have brought these bonds out of the safety boxes of original purchasers. Some are now offering, and I have good reason to believe that most others held locally will be offered within the next few weeks. There are two main reasons for this, not affecting the validity of the bonds. First, ready cash is needed in meeting obligations and recasting operations for another year. Second, there are better paying investments offering now and then in lands and livestock.

I do not ask you to give me any specific information, unless you should have it at hand, but would like to have your opinion in a general way. In what quarter should one hope to find interest in these securities—Baltimore, New York or the Western cities? And what class of investors do you think might be induced to take an interest in them?

One can readily understand why the large investors could not be induced to give serious thought to the offering of a single issue of such bonds from this section, where personal investigations at the locality of issuance might be considered necessary. But the same investors might consider it worth while to look into the matter when several issues from adjoining or nearby counties aggregating several hundred thousand dollars are offered at discounts that would warrant special investigation.

Our State drainage laws, modeled after those of the Northern and Western States, have been in force long enough to be thoroughly tested in the supreme court. Drainage districts are recognized by statute as political subdivisions of the State and funds for meeting annual maturities are paid in to the tax collectors of the several counties, and have been legally recognized as a lawful tax upon the lands of the drainage districts.

In each instance the cost of reclamation of our rich alluvial bottom lands in the hill counties of the northeast prairie region of Mississippi, and the bonded debt

of each district, is but a small part of the commonly accepted value of the lands of the district.

Investment here in these securities, after thorough investigation, would tend to give general confidence to outside capital in this comparatively new class of securities throughout this State.

I am only indirectly interested in the sale of the bonds in question. Such matters have come closely under my observation from the fact that I am an owner of bottom lands in one of our districts and for several years have been one of the three drainage commissioners of this (Oktibbeha) county.

Trusting that I have not encroached too much upon your valuable time, and thanking you in advance for any information or suggestions you may give me in this matter, I am.

The term "drainage," of course, has various shades of meaning. In the present instance, as applied to portions of the northeast prairie region of the hill counties of Mississippi, it means the rapid removal of flood waters during periodic overflows from the alluvial bottom lands by means of big ditches or channels cut with floating dredgeboats.

In all such cases, after the channel has been cut, the water goes off by gravity flow. No pumping stations are required, for there are no "swamps" in Northeast Mississippi, according to the commonly accepted meaning of that word in the Northern and Western States. These bottoms, with liney bluffs or higher lands adjacent on either side, are from a quarter to one and one-half miles in width. Unlike conditions in the Delta, the adjoining high and rolling lands afford healthful and ideal places of residences for landowners, croppers and renters who cultivate the bottom lands.

These bottom lands are all fertile and productive. The greater part of them receive deposits annually from the erosion of the Selma chalk bluffs bordering the bottoms, and hence they are rich in lime and class with the very best alfalfa lands in the South. They are also well suited to grain crops. They will compare favorably in all respects with the richest lands in the Delta, and they have the advantage over the Delta lands in altitude, healthfulness and a less humid and oppressive heat in summer.

Uncleared or wooded portions of these bottoms (in practically all instances valuable mill stock, with the exception of small hickory, has been removed), when simply fenced with three or four barbed wires furnish excellent pasturage for livestock nine or ten months in the year through the rapid voluntary growth of native grasses, clover and switch cane.

In some of the drainage districts practically all of the lands are cleared and in cultivation, and in some instances large tracts have been tiled. The cleared lands have sold at \$40 to \$75, and cleared and tiled lands at \$100 to \$150 per acre. Wooded lands of the drainage districts have usually sold at about \$30 per acre, though only a small percentage of such lands have ever been put on the market.

The cost of the reclamation of bottom lands in this section has been from \$5 to \$7.50 per acre on each acre of overflowed land. In nearly all instances not only the overflowed land, but also all immediately adjoining lands are embraced in the drainage district. For instance, the Central Drainage District of Oktibbeha county embraced 10,000 acres in its legal organization, all of which are pledged for the obligations of the district, although only 8000 acres were overflowed. In all cases the bonds are serial, maturing in from one to twenty years. A fixed schedule of assessments, approved by the Chancery Court and recorded by the County Chancery Clerk, provides for a uniform levy, usually about 50 cents per acre annually during the life of the bonds. This schedule covers all maturities and embraces all costs of construction, maintenance, administration and collection of drainage taxes, and sets apart a fund for contingencies. The affairs of the district are administered by three bonded county drainage commissioners, who annually submit all acts and proceedings to the Chancery Court for approval. Such drainage districts are declared by legal statute to be political subdivisions of the State.

The records of all drainage districts in this section are clean. There have been no defaults in maturing obligations, no delinquents on the tax rolls, the legal rights and powers of the districts have not been assailed and are not now threatened from any quarter.

Starkville, Miss.

F. L. WIER.

Knoxville as a Location for Pottery Plant

[Special Correspondence Manufacturers Record.]

Board of Commerce,
Knoxville, Tenn., January 12.

The European conflict has forcibly reminded many of the necessity for radical changes in various lines of industry, and particularly with industries that have been using raw materials from European countries. Pottery plants will doubtless feel the effect of the war in this regard as much as any other industry, as it will hardly be practicable for them to secure regular shipments of imported china clays for some time. This fact will doubtless result in teaching those manufacturers or superintendents who have heretofore argued in favor of the imported clays that our domestic clays are as available from every standpoint as are the imported clays.

The value of the pottery ware manufactured in the United States during the year 1913 was \$37,902,375. The value of the domestic pottery clay produced in the United States during that time was \$641,221, while the imported china clay was valued at \$1,623,993. During that period we imported pottery valued at \$10,177,451.

Practically all of the domestic clays used in American potteries are produced in the South. A plant in the South well located as to raw materials and distribution of finished product, properly managed, would unquestionably prove a profitable investment. From domestic clays as good pottery can be made as from the imported clays. The South furnishes practically all of the domestic raw materials used in Northern pottery plants. It would therefore seem thoroughly practicable for the South to utilize the raw materials to be found in the South in making products which would successfully compete with that of the potteries in other cities of the United States.

Knoxville presents splendid advantages for the location of a pottery plant, because of its proximity to the raw materials entering into the manufacture of pottery, its transportation facilities, its distributing possibilities, low freight rates on finished products and raw materials, low-priced labor, cheap fuel and cheap hydro-electric power.

The raw materials exist in almost inexhaustible quantities. Knoxville's proximity to the Tennessee-Kentucky coal fields is a strong argument in favor of the location of a pottery plant at Knoxville. Good three-inch steam coal, delivered Knoxville, costs approximately \$1.30 per ton. Below is a fairly representative analysis of coal in the Knoxville district:

Moisture	1.64
Volatile matter.....	38.92
Carbon	56.24
Ash	2.90
	100.00
Sulphur .....	.663
B. T. U. exceed 14,000.	

All coal mines in the Knoxville district are within 20 to 60 miles of Knoxville.

Knoxville is in the center of the hydro-electric power development of East Tennessee. There is perhaps more undeveloped hydro-electric power in the Knoxville district than in any other section of the country. Already a sufficient quantity of power has been developed to secure as good rates as can be had elsewhere. The rate is, of course, dependent upon the quantity of current used. For instance, on a monthly consumption of 50,000 K. W. H. the rate amounts to a little over .01 cent per K. W. H., while on 60,000 K. W. H. the rate is even less. The central station located at Knoxville is giving one of the best power rates and as good service as can be had of any other station in the South.

In the cost of raw materials Knoxville is specially favored over East Liverpool, O., for example, as a natural location for pottery manufacturing plant. Skilled labor would, of course, have to be imported from other pottery centers. There is a marked difference in favor of Knoxville in the cost of raw materials delivered at Knoxville as compared to delivered prices in pottery centers of the North.

That a pottery plant located at Knoxville, manufacturing the same quality of ware as is manufactured in the North, could absolutely control the Southern market is best shown by the accompanying tables:

The comparison is again made between Knoxville and East Liverpool. The rates from Knoxville are class rates. Rates would be even lower should a pot-

tery plant be established at Knoxville, as it would then be possible to put in a line of commodity rates. But even with class rates, the rates on the finished product are about 50 per cent. less from Knoxville to given points in the Southern territory than from East Liverpool.

Rates in Cents per 100 lbs. on Crockery or Earthenware, Other Than Art or Decorated.

From East Liverpool.	From Knoxville.	To
C. L. L. C. L.	C. L. L. C. L.	
56 84	24 35	Atlanta, Ga.
45 68	22 36	Birmingham, Ala.
58 86	28 44	Macon, Ga.
61 91	35 53	Savannah, Ga.
61 91	35 53	Jacksonville, Fla.
58 86	28 44	Columbus, Ga.

Rates in Cents per 100 lbs. on Common Jug Ware.

From East Liverpool.	From Knoxville.	To
C. L. L. C. L.	C. L. L. C. L.	
51 51	24 22	Atlanta, Ga.
51 51	22 22	Birmingham, Ala.
51 51	28 28	Macon, Ga.
50 50	35 35	Savannah, Ga.
51 51	35 35	Jacksonville, Fla.
	28 28	Columbus, Ga.

Knoxville's claim for favorable consideration as a pottery manufacturing point is well founded when it is taken into consideration that it costs considerably less to assemble raw materials at Knoxville than at other pottery manufacturing centers, and that Knoxville is markedly favored in the matter of rates on the finished products to the Southern territory as compared with the rates from other pottery centers to points in the South.

Again, a plant located at Knoxville could successfully compete with Northern pottery plants for business over the entire country because the finished product could be manufactured more cheaply in Knoxville. Summing up, we find that Knoxville is a desirable point at which to locate a pottery manufacturing plant because—

1st. Knoxville is centrally located, is an interior city on the Tennessee River, with excellent railroad facilities for distributing pottery ware over the entire South.

2d. The domestic clays used in American potteries and produced in the South can be advantageously and economically assembled at Knoxville.

3d. The freight rates, both on raw materials and finished products, would enable a pottery at Knoxville to reach large consuming markets, particularly the Southern territory.

4th. Knoxville has abundant cheap hydro-electric power and the highest grade fuel coals, the cost of three-inch steam coal delivered Knoxville being approximately \$1.30 per ton.

5th. Knoxville has an open climate, cheap labor, a low cost living expense and desirable factory sites.

Chattanooga Stamping & Enameling Co.

Construction has begun on the Chattanooga (Tenn.) Stamping & Enameling Co.'s proposed plant, detailed last week, and of which a view is presented herewith. This plant will be equipped for the manufacture of enameled sheet steel and iron products and other similar articles. Mark K. Wilson, Chattanooga, has gen-



CHATTANOOGA STAMPING & ENAMELING CO.'S PROPOSED PLANT AT CHATTANOOGA.

eral contract for the first building, which will be one story high and 300 feet long by 100 feet wide, of brick and concrete construction, with steel sash, fire sprinklers, vacuum steam heating system with 100-horsepower boiler, electric light and power, individual electric drive, etc. W. H. Sears, Chattanooga, has furnished plans and specifications for this building, and has orders to prepare plans for the three wings. Mr. Wilson has let subcontracts as follows: Brick work, C. D. Haynes; sheet-metal work, Mountain City Stove Co.; roofing, Johns-Manville Company; steel sash, Sloan & Co.; stone work, C. E. Smith; wood work and lumber, Willingham Lumber Co.; all of Chattanooga. The first building will have furnace and boiler room extensions; concrete foundations and walls up to grade; vitreous shale brick, furnished by the Key-James Brick Co., Chattanooga, from grade line; each bay 20 feet; one row of columns through building, 20 feet on center, 14-foot story to underside of trusses, spanned by Fink steel trusses; four monitors on each ridge, divided by steel sash and skylights in center; painted white throughout; floor of either wood blocks or tar concrete, with maple flooring.

Investment Bankers' Committees.

President A. B. Leach of the Investment Bankers' Association of America has announced the standing committees of the association, the chairmen of which are as follows:

Revision of constitution, N. D. Jay, First National Bank, Milwaukee, Wis.; finance and auditing, John E. Blunt, Jr., Merchants' Loan & Trust Co., Chicago; foreign relations, Erastus W. Bulkley, Spencer Trask & Co., New York; irrigation, reclamation and agricultural credits, H. P. Wright, H. P. Wright Investment Co., Kansas City; legislation, Allen G. Hoyt, N. W. Halsey & Co., New York; membership, W. M. L. Fiske, William A. Read & Co., New York; municipal bonds, Chas. W. McNeer & Co., Chicago; publicity, George B. Caldwell, ex-president Investment Bankers' Association; program for annual meeting, A. C. Foster, Sweet, Causey, Foster & Co., Denver; public service corporations, John E. Oldham, Merrill, Oldham & Co., Boston; railroad bonds and equipment trusts, Lewis B. Franklin, Guaranty Trust Co. of New York, New York; taxation, Warren S. Hayden, Hayden, Miller & Co., Cleveland; timber bonds, Calvin Fentress, Lyon, Gary & Co., Chicago. Mr. Frederick R. Fenton, 111 W. Monroe street, Chicago, is secretary of the association.

Home Insurance Statement.

The Home Insurance Co., 56 Cedar street, New York, has issued its one hundred and twenty-third annual statement, which shows its total assets to be \$35,313,539. Its investments include—at their market value—railroads stocks, \$11,341,890; railroad bonds, \$9,470,540; State and city bonds, \$4,578,573; miscellaneous stocks, \$1,361,000; miscellaneous bonds, \$2,740,200, besides other items. Cash is \$2,161,179. Capital stock is \$6,000,000, and reserve premium fund \$14,268,024. Surplus as regards policy-holders is \$18,703,474. Elbridge G. Snow is president; Frederic C. Buswell, Clarence A. Ludlum and Chas. L. Tyner, vice-presidents; Aureunah M. Burtis, secretary; Henry J. Ferris, Howard P. Moore and Vincent P. Wyatt, assistant secretaries.

The Wheat Situation and Prices

At the present time, when there is much discussion in regard to the advance in the price of wheat, some statistics as to prices issued by Renskorf, Lyon & Co., grain brokers of New York, are particularly interesting. In the leaflet which they have recently issued bearing on the "Effect of Wars on Wheat Prices," they do not undertake to discuss the prices of wheat for any periods other than those in which the market has been affected by war.

According to these figures, in the early stages of the War of the Revolution, or in 1788, the price of wheat at seaboard markets averaged 93 cents, and from this point advanced to 1796, when it averaged \$2.48 per bushel, the highest during that period being \$3 per bushel. The price continued with a high average for some years, owing to the French Revolution and Napoleonic wars and our own War of 1912.

In 1815 the Battle of Waterloo resulted in a break in the prices of wheat, which in 1815 averaged \$1.76, rising in 1817 to \$2.85 per bushel.

In 1852 wheat sold at 38 cents, but during the Crimean War of 1854-56 rose to \$1.85 in 1855, and after some decline rallied again in 1857.

At the beginning of our Civil War in 1861 wheat sold at 62 cents, and rose from this to \$2.28 in 1864, but broke with the ending of the war to 74 cents in the early part of 1865, followed by sharp advance to \$2.85 in the spring of 1867, the same figure which it reached just 50 years previously in 1817.

During the Franco-Prussian War of 1870-71 wheat advanced in price from 74 cents to \$1.38, declining to \$1 at the close of the war and rising again to \$1.60, from which it declined to 92 cents in the panic of 1873.

The Russo-Turkish War of 1876-78 saw wheat at 83 cents in 1876 and \$1.76 in 1877, from which price it broke to 77 cents at the conclusion of the war, only to rise again to \$1.44 in 1882.

At the beginning of the Spanish-American War in 1898 wheat was low, and in the spring of 1897 was 63 cents a bushel. Under the influence of a sharp speculative corner prices rose to \$1.85 for May and \$1.25 for July in 1898, collapsing to 63 cents before the end of the war.

In 1904-1905, at the beginning of the Russo-Japanese War, wheat sold at 74 cents in November, 1903, rose to \$1.21 in 1904 and 1905, and broke to 69 cents in 1906, advancing again to \$1.00.

In discussing the world's production and consumption of wheat, Messrs. Renskorf, Lyon & Co. say that, taking a series of years together, it can be stated that the world's annual needs in times of peace even, fully use up the produced crops. This season began with unusually low reserves, in spite of two successive large crops in the United States, while the official estimate of the Agricultural Department estimates that this season's world deficiency is 400,000,000 bushels.

These facts are interesting in view of the situation throughout this and other countries.

In discussing the wheat situation one of the best-posted grain men of Baltimore said to the MANUFACTURERS RECORD:

"The suggestion of an embargo on shipments of wheat from this country is unwise, unnecessary and almost a crime. Several times in the past 10 years wheat has sold at about present prices without any such legislation being talked about. There still remains in this country enough surplus to allow 5,000,000 bushels per week to be exported in wheat and flour, and yet have the usual carry over into the next crop.

"We are only five months, or about 20 weeks, from the winter harvest of 1915, in which we can look for an increased acreage of 10 per cent., which ought to produce an increase of at least 50,000,000 bushels. This new wheat is selling today in the future market at from 15 to 20 cents per bushel cheaper than the old wheat, showing what the grain trade expects in the next harvest. The high prices now ruling the world over will cause economies at home and abroad. When we consider the difference in the cost of bread between flour at \$5 and flour at \$7 it is scarcely appreciable.

"Again, the scarcity of ocean tonnage and its high

price deters the free movement from our ports. For several months past the grain trade of Europe has been taken out of private hands very largely, and there is little individual initiative or speculation in Europe. The European Government bureaus buy the cheapest food in the cheapest markets of the world, when and where it seems best to them. The transactions between individuals or European exchanges have sunk into insignificance. Since the last advance in this country scarcely anything has been contracted for. Hence I consider the high prices a sufficient deterrent to excessive exports. The visible supply of wheat was never greater at this season. All the ports on the Atlantic and Gulf coast even now are more or less congested with grain.

"The advance in wheat is very largely due to the

action of farmers in withholding their grain and in their speculative purchases. There has never been a time in my experience when the wheat growers who ship to Baltimore have held back so much of their wheat, and I have never before known so many farmers speculating in wheat; and these two things combined, the holding back by farmers and the buying of futures by farmers, are largely responsible for the present prices."

"An embargo on grain would be disastrous to the farming interests of the country, and it is hardly conceivable that the Government would be so unwise as to take a step which would immediately result in such tremendous losses to wheat growers throughout the whole land. We have been claiming for years that we were interested in the prosperity of the agricultural interests of the country, but an embargo on grain shipments would be so disastrous as to seriously injure the prosperity of the entire grain-growing interests of the nation."

Rural Development in Carolina Sandhills

By BION G. HUTLER.

Some years ago, when this grayland section of North Carolina was entirely in the hands of the lumber and turpentine folks, John Blue built a lumber road out into the forests to haul the mill and still products down to the Seaboard Air Line road at Aberdeen, then merely a spot on the map of the railroad. This part of the State was looked on as absolutely hopeless as far as farming was concerned.

Since then the timber has gone, and with it the lumber and the naval stores. As the forests were cut away farms were attempted on a half-hearted scale, and the people were surprised at the excellence of the crops made on the warm, mellow soil. The farm notion caught on, and some of the most successful big cotton plantations in the State are on the Aberdeen & Rockfish road, which came to be the name of Mr. Blue's lumber road by the time he had pushed it through to Fayetteville and made it a useful link in the transportation of the communities served. Hoke county was created in the wilderness, and in half a dozen years it has come forward until it is one of the show counties of the State now. Fine cotton plantations were made all along the lower end of the Aberdeen & Rockfish road, and clearing progressed up along the line toward Aberdeen, with the exception of a 5000-acre tract that lined the road on both sides for several miles. This tract constituted one of the longest unbroken stretches of land flanking any railroad in the State.

On either side of this big lot the making of farms had been undertaken on larger or smaller scale. Fruit plantations joined each other up in the neighborhood of the Seaboard Air Line. Tobacco farms began to multiply and succeed. A wave of progress seemed to be sweeping everything but this big unbroken tract. Four or five years ago it fell into the hands of the Ashley brothers, men of capital and big business interests of Glen Falls, N. Y. For a while they paid no attention to their holding, but a few weeks ago a party headed by E. L. Ashley came down from New York to look over the ground and see if anything could be done with it to make it an annex to a big stock-breeding farm that the Ashleys have in New York. The verdict was not favorable, as the pasturing facilities did not appear to meet Mr. Ashley's ideas of caring for the costly imported horses that his farm handles, and it looked as though nothing would be done. Fortunately, Mr. Ashley fell in with A. G. Johnson, who has within the last year introduced tobacco in this section on a big scale, and Ashley and Johnson fell to discussing the big tract as tobacco farms, with the result that before they had gone very far they had dug up a development scheme that neither one of them had contemplated at the beginning.

The outcome of the conferences that followed was a project that is out of the ordinary, and one that is worth studying by other men who have land that is not in use. An agreement was made by these men to make farms on the 5000 acres, and the day after the transaction was closed a surveyor was on the ground locating the boundaries preparatory to creating a big

farm community of a large number of small farms to be operated by white proprietor farmers.

Before the transaction was concluded the plan of operation was determined. It provides for a location of the entire property. At a point on the railroad about the center of the property a railroad station has been chosen by the property-owners and the railroad folks. This will be called Ashley Heights. From this point, where a station will be built at once, roads will be built to extend to Southern Pines, to the Fayetteville road, and in other directions. Already one of the excellent sand-clay roads of this part of the State runs from the new townsite to Aberdeen and to Raeford.

The roads will be broad, straight, and as level as possible. They will be avenues that connect the new town with the neighborhood towns, and on these modern new roads will be located the farms, which will be of small acreage, as the desire is not to get this land into any speculative condition, but to shape it up so that every available acre may be set to work. The new town will be a center for the uses of the farms. Station, school-house and such public buildings as are necessary will be erected there, and also as many farmhouses as can be centered there on the farms that will adjoin the town, the idea being to make the town a cluster of farmhouses, with their attendant necessary public utility buildings. On the roads leading out through the property other houses will be built in such groups and in such units as will best serve the purpose of farm operation and agreeable rural life.

The houses will be from five to eight rooms, one and two story, built after plans furnished by a designer who can unite comfort and convenience with some artistic appearance, and every house will harmonize with its surroundings. The houses will be fitted with water, electric light, sewer system, and already a telephone line is pushing out from Raeford to join the new community.

Water will be supplied by a community system, and it is proposed to put in a small plant at one of the numerous streams on the place to furnish electric lights.

The farms will be sold in 50-acre plots, or probably some a little bigger, but they will be sold only to men who give evidence of being desirable persons to join a movement of this kind for the energetic development of the land. To make it easy for the right men to get hold, the sales will be made with a small initial payment, and terms of several years will be offered on the balance, as the proposition is to establish on the place men who can have a chance from the farms to make their payments. A somewhat paternal system of farming will be undertaken. The farm will be cleared by the men who now own the property before any of it is offered for sale, and when a buyer comes into possession of his place it will be in shape to go to work instead of simply a location on which he has to make his farm before he can do anything with it.

The proposed paternal features do not signify any particular restrictions as to what the farmer may do, but rather a proposal to help him plan and accomplish. With that end in view it is likely that each farm will have a few acres of peaches planted that the entire

group of farms may be harvesting their fruit, at the same time be able to load out carloads together and get the benefits of the better marketing opportunities.

There comes in the interest that is felt by the Aberdeen & Rockfish Railroad. This is one of the small roads of the State, but the Blues have been active backers of every scheme that has for its object the development of its territory. W. A. Blue, the superintendent, is constantly trying out any new crop or any new thing suggested for the welfare of the neighborhood. He is undertaking to get in touch with the consumers' clubs of the North, where the buying question is concerning the people like the marketing question is concerning the farmers of the South, and he is making the Ashley Heights farms one of his especial proteges.

One of the main crops will be tobacco, and it is the intention of Mr. Johnson to get in touch with tobacco men of Ohio, Pennsylvania, Connecticut and other cold climates, and show them how much more agreeable and profitable it will be for them to farm in a mild climate and long season. Fruit farmers of New York and Michigan will also be shown the merits of this better climate. Every effort possible will be made to get this class of men who have been trained to get results from specialized intensive farming on small farms, and everything that can help them to make a success will be planned by the management.

It is the intention to sell the farms at a small advance over the actual cost, Mr. Ashley figuring that a reasonable profit on the money is worth more to him than to hold his land indefinitely with a prospective big return and no good coming to anyone. But the determination is that every man who comes to the place shall be a success if it is possible, for aside from the moral influence of men who fail to make good there is the welfare of those men to consider, and it is not the purpose to get men on the farms and have them meet with disaster if it can be prevented.

The settlers on these farms will be encouraged to raise diversified crops as far as is possible, to give to cattle, hogs and poultry all the attention they can, and to include fruit and vegetables in their plans. The Seaboard Air Line is paying all the attention it can to the venture, for it is anxious to establish an institution like this one will be as a model for other ventures of a similar sort.

Naturally the community around the development is highly favorable, and the Sandhills Board of Trade, that organization of the farmers and business men of the several towns and two or three counties, the association that has done so much in the last year or so to advance the interests of the neighborhood, is doing what it can to help this movement along. Already, although not a definite thing has been done to show where the farms will be located, or the character of the houses, or any of the other detail, in the neighborhood of a dozen inquiries for locations have been received, and it is likely that the farms, which will number somewhere from 50 to 100, will be quickly disposed of.

The plan is to push the work as fast as possible, so that some of the farms may be ready in the spring for the first crop, which will be cowpeas, with some garden stuff and vegetables, and not to exceed 50 or 70 acres of tobacco. If necessary to meet demands for the houses it is found they must be built in the shortest possible order, Mr. Johnson says he will put on force enough to clean up the job by the middle of the summer. Otherwise, he will permit it to take a more leisurely course, and run through the year with it. In either event, the improvement will take several months to finish, for even though the houses should be hurried along so they might all be occupied by late spring, the road-making and detail work will require considerable time, and this will be a lively spot for a year or two.

Just as an indication of what this enterprise means to North Carolina, it is said that the Ashleys have intimated that if this proposition works out all right it will be duplicated on another tract of land if a similar location is found that suits them and Mr. Johnson. However, that is in the distance. But there is no reason why any other community cannot take up a work of this kind for itself, and all sections of the State join in making North Carolina what Nature has provided it can be when the people so elect.

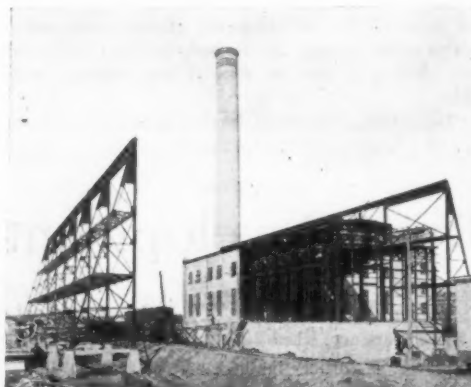
Southern Pines, N. C.

The second fiscal report of the commission government of Jackson, Miss., has been published in the quarterly issue of the Commission Government Record.

\$1,000,000 ELECTRIC PLANT.

Texas Power & Light Co.'s Service at Twenty-Four Texas Cities.

The \$1,000,000 electric plant built at Waco by the Texas Power & Light Co. of Dallas was formally opened on January 8, and will furnish electricity to 24 cities between Waco and Fort Worth and Dallas, 200 miles of high-tension transmission lines being used. Electricity will be supplied to Waco, West, Hillsboro, Itasca, Grandview, Alvarado, Cleburne, Joshua, Milford, Italy, Forrester, Rice, Waxahachie, Collier's Chapel, Sterrett,



TEXAS POWER AND LIGHT CO.
Coal-Bunker Construction.

Red Oak, Corsicana, Kerens, Lancaster, Trinity Heights, Ferris, Palmer, Ennis, Oak Grove and Alma; also the entire system of the Southern Traction Co.

The completion of this large generating station to supply power to a number of small towns marks an important epoch in electrical development in Texas. For two years the Texas Power & Light Co. has been supplying these towns with purchased power from the Fort Worth Power & Light Co.'s plant, the old Waco plant being used to carry the peaks. The new plant was originally designed for two turbo-generators of 7500 kilowatts, or 10,000 horse-power each, and 10 Babcock & Wilcox boilers. While only one turbo-generator and four boilers are installed at present, all other equipment, including coal bunkers, stack, cooling towers, condensing equipment, switchboard, river intake



TEXAS POWER AND LIGHT CO.
Plant, Cooling Towers and Cold Storage.

and tunnels, etc., are completed for two turbo-generators and 10 boilers. The plant is also designed so that additional boiler units and generating units can be added as necessary.

The building is of brick, concrete and steel construction, 160x200 feet, with a height of 63 feet. The bottom of the foundations is 41 feet below the ground level, which is 10 feet below the bottom of the Brazos River; 18,600 cubic yards of dirt were excavated for the foundations and condensing equipment, and 9000 cubic yards of concrete were used; 220 tons of steel were used for reinforcing purposes, and 1200 tons of structural steel; 420,000 brick were used in the walls and boiler settings.

A feature of the plant is the large concrete stack, towering 241 feet above the ground. The inside diameter is 16 feet, a six-inch fire-brick lining being used. The wall at the bottom is 21 inches thick, and at the top 8 inches. The opening for the breeching is 11x23 feet. The outside appearance is a work of art. The

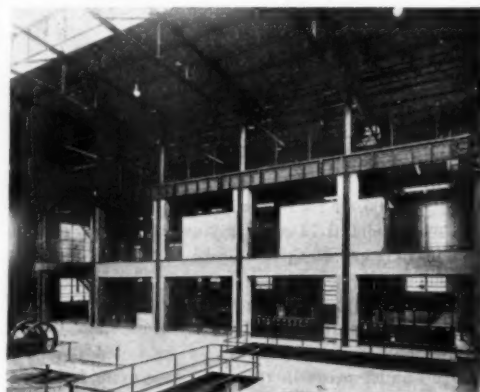
plant is designed to burn coal, oil or gas, oil being used at present. Bunkers are provided for 1800 tons of coal, and are so arranged that the fuel is fed to the boilers by gravity. Fuel oil tanks of 260,000 gallons capacity are available. An automatic pressure system is em-



TEXAS POWER AND LIGHT CO.
Interior of Boiler-Room.

ployed when burning fuel oil, the oil being heated to about 140 degrees by the exhaust steam from the pump. An artesian well with a flow of 800,000 gallons per day with water temperature of 110 degrees F. furnishes the feed water for the boilers. This well has a pressure of 85 pounds per square inch at the surface. Six cooling towers are used to cool the condensing water when the river is low. The turbo-generator is of the Curtis type. The most up-to-date type of switchboard equipment is used, all this and other electrical material being furnished by the General Electric Co., Schenectady, N. Y.

Details of construction, installing machinery, furnishing materials, etc., may be outlined as follows: General contractor, Phoenix Construction Co., New York; engineers, Sargent & Lundy, Chicago; building construction, waterways and conduits, Cleveland



TEXAS POWER AND LIGHT CO.
Switchboard Installation.

Construction Co., Cleveland, O.; electrical equipment and turbo-generators, Southwest General Electric Co., Dallas; boilers, Babcock & Wilcox Co., New York; structural steel, Virginia Bridge Co. of Texas, Dallas; condensing equipment, Alberger Pump & Condenser Co., New York; reinforced concrete stack, General Concrete Construction Co., New York; oil burners for boilers, Southern Oil Burning Equipment Co.; turbine-room crane, 40 tons capacity, Whiting Foundry Equipment Co., Harvey, Ill.; air washers, Spray Engineering Co., Boston; flues, uptakes and galleries, Southwestern Mechanical Co., Fort Worth; cooling towers, Wheeler Condenser & Engineering Co., Carteret, N. J.; steel switching towers for switchyard, Milliken Bros., New York; steel sash and skylight glazing, Trussed Concrete Steel Co., Dallas; roofing and flashing, Torbert & Germond, Waco; plumbing, Hill Bros. Co., Waco; miscellaneous grills, screens and ventilating system, Stubbs Foundry Co., Waco; lumber and timber, Wm. Cameron Company, Waco; general piping, Pittsburgh Piping & Equipment Co., Pittsburgh; artesian well, R. H. Dearing & Sons, Dallas; miscellaneous shop work, Waco Machinery & Supply Co. and D. June Machinery Co., Waco; gravel and sand, Texas Sand & Gravel Co., White Rock Gravel & Sand Co. and Consumers' Sand & Gravel Co., Waco; cement, Texas Portland Cement Co., Dallas.

An Analysis of Present Conditions.

Manning, S. C., January 18.

Editor *Manufacturers Record*:

I have read with much interest the letter of Mr. Lar-kins, and also the letter of Mr. Reynolds, and as you have invited business men to use your columns to give expression as to the legislation needed, I will offer a few reasons, as I see them, why the money market is so tight and business so dull.

First, let me say that, as I see it, the Government at Washington has done all it could to remedy and counteract the effects of the war on business, and if we had been operating under the old Republican laws we would have had the worst panic the United States ever had, and I will always feel that Mr. Wilson was divinely sent to guide us through the trying times of the present troubles.

When we get sick the wise doctor diagnoses the cause of trouble before he recommends any special treatment, and our entire commercial body has been showing signs for some time of internal troubles that only require some unusual strain on their resources to bring about untold hard times and failures and idleness among the laboring classes, and I will proceed to give you my diagnosis of the case.

For the last 20 years it has been the custom of a large majority of Cheap John politicians to ride into office by catering to the labor organizations and making all sorts of promises to reduce the hours of labor and increase the price of wages per day, until the carpenters, the bricklayers, the plumbers and mechanics are getting from \$3 to \$7 a day and working about eight hours per day, thereby adding to the cost of buildings of all kinds, material of all kinds and all classes of manufactured goods. Now add to this condition the laws regulating the child labor in all the factories, and placing them on the parent as a burden and liability to make a support for, while they loaf on the streets and go to the picture shows and spend all the dimes they can get and add to this universal tendency, beginning 15 years ago, toward extravagance in everybody, from the bootblack to the railroad magnate, until everybody has been spending money without even stopping to see whose money they were spending, just so they could make a big show with automobiles costing from \$1000 to \$5000, and neglecting the business, that they are looking to for their support, for motoring trips around the country, drinking fine booze and smoking 25-cent packages of cigarettes on a credit. In fact, it reminds me of a 50-horse engine coupled to a 25-horse boiler, and anybody that would sit down and think sanely for 10 minutes would figure out that there was a stopping-place somewhere on the road of extravagance. The disturbance across the water seems to have caused a reckoning of the cash account to the undoing of lots of us.

It is not the tariff that causes the trouble so much, but this eternal meddling with business, dictating who shall work and how long and when they shall get their money. Why, our State directed the railroads to pay off the shop labor every week, and I have to keep the officials informed as to how many women and how many men and how many boys and girls I employ and the average wages. In fact, it will take about the entire time of a first-class bookkeeper to answer all the questions a manufacturer has to answer to the State and United States Government. All this cost time and money without any returns; in fact, it is a liability, as it takes an army of employees to figure out all the statistics and tell us how much money we have made.

Another reason that we are all in the slough of despond is that the system of credit has all been wrong in the South, and it has been too easy for us to fool the merchant and get five times as much credit as we should have. Just to illustrate: I know of a man in my county that secured credit to the amount of \$2200 on one pair of mules that he had only paid half cash on, and when the hard times struck him he failed to pay and the creditors had the loss to take. And the cause of his trouble was he lived beyond his income, and that is the real trouble of our people today. I think this spell of hard times is a great blessing to the people of the South, and it would have had to come sooner or later, for if we had been able to sell our cotton this season at ten to eleven cents per pound we would all have been too highminded to work, and every man would have been trying to hire his neighbor to do his work for him, and we would all have been on the hunt for pleasure from the least to the greatest; the plow boy would

have quit plowing, the carpenter would be above working, and the factory hand would have demanded six hours a day and twelve-hour pay.

But now the bubble has burst and we see where we are at, and now we have no trouble in getting all the labor we can use at its value, and when the war is over we will have forgotten some of our extravagant ways, and then the South will come into its own and show to the rest of the country what a grand country we have. Our troubles have always been that we could make a living so easy that we have never learned in days of prosperity to lay by a nest-egg for hard times.

In conclusion, let me say that, in my judgment, there is nothing that so saps the money resources of the South as the whiskey consumption. If we had the \$12,000,000 that are spent this last year for whiskey in our State in the pockets of the men who spent it, we would not be crying hard times and for more money in the banks to help us carry our cotton over, but we would be looking for opportunities to invest the surplus cash that the banks would have, and peace and prosperity would abound where poverty and starvation stalks abroad in the land. The conclusion of the whole matter is:

Let the laws be just and fair to capital, and give it a rest for a season.

Let the laws be fair but firm with labor, and allow the employe to have a say as to what shall constitute a day and what it is worth.

Let the laws be the guardian of the people, and not the master and oppressor.

Cut out the extravagant appropriations, as the money must come from the people. Then the nation would rise up and call you blessed.

F. C. THOMAS.

For a Balance Between the Democratic and Republican Tariffs.

Allenhurst, Monmouth Co., N. J., January 18.

Editor *Manufacturers Record*:

In my case, I attribute dullness in American markets absolutely to the question of the tariff. This is the biggest question before the people in the country today. The practical solution of this problem means, in my opinion, after years of exhaustive study, permanent prosperity to American business institutions, homes and families.

To bring about a reasonable solution of this mighty problem, we must confront the economic evils of the Democratic tariff on the one hand and the Republican tariff on the other, and endeavor to strike a healthy balance between the two.

The Democratic tariff is a revision downward of the Republican tariff until it reaches the free-trade level, which means "underselling" the basic cause of destructive foreign competition. On the other hand, the Republican tariff is a revision upward of the Democratic tariff until it reaches the protective trade roof, which means extortionate prices for protected commodities and a debilitating, enervating and shoddy producing effect upon protected manufacture, in the absence of proper Government regulation.

This is the history of the Republican tariff, that aims to protect American producers against unfair competition of foreign producers, but fails to protect American consumers against extortionate prices on the one hand, misrepresentation, substitution and adulteration of grades and qualities of products on the other.

To offset the Democratic tariff, Congress should impose such duties as will equal the difference between the actual labor cost of production at home and abroad, exclusive of other fixed charges.

To offset the Republican tariff, Congress should compel every foreign or domestic product to be labeled to indicate the country of manufacture, as "made in Germany," "made in U. S. A."

Each label or stamp should be numbered, and each numbered product should be registered with the existing Federal Trade Commission, together with a history of the product as to grade, quality, quantity, number of articles and measurement thereof. Severe penalties should be imposed upon foreign and domestic producers should they falsely grade products or falsely register products with said commission.

The Federal Trade Commission should be appointed judge of international competition and empowered to create an international jury of awards. Such awards

should be made in the form of diplomas or medals relating to the superiority of products or equality thereof. Said diplomas or medals to be used by manufacturers for publicity and educational purposes in campaigns to secure control of trade.

The international jury of awards, in order to be unbiased and impartial, should be selected from distributors of domestic merchandise on the one hand, and importers, distributors of foreign merchandise on the other.

Should it be deemed necessary for domestic manufacturers of a given industry to co-operate and combine for the purpose of establishing standard systems for grading domestic products equal to foreign products, then and in that event, nothing contained in the anti-trust laws shall be construed to forbid the existence and operation of joint trade combinations instituted for the purpose of making competition of foreign industries.

That the Federal Trade Commission should be empowered to establish equalized competition between foreign and domestic industries by graduated methods, beginning with some important industry. In the meantime, Congress should repeal the Underwood free-trade and tariff law of October 3, 1913, and re-enact the Payne protective trade and tariff law of August 5, 1909.

THOMAS COCHRAN,

Retired Manufacturer, General Manager Lincoln Protective League of New Jersey.

[While the MANUFACTURERS RECORD does not agree with Mr. Cochran as to the Trade Commission, believing that that organization ought never to have been created, we publish his letter as covering one view of the tariff situation in which Democrats and Republicans alike are criticised, and we think justly, for both have made many blunders.—Ed. MANUFACTURERS RECORD.]

Are Timber and Charcoal Making Available to Create Employment.

Inman, S. C., January 18.

Editor *Manufacturers Record*:

I have been "racking my brain" for some months trying to devise some plan by which the people of this section of the country might to some extent find a means by which to help themselves out of their depressed condition.

There is a considerable quantity of hardwood timber, such as oak, hickory and poplar, in this section. If there is any demand for this kind of timber and we can be put in touch with those who are in the market, it occurs to me that it might prove to be a great help to the people, as they can devote two or three months of their time to this before starting the next crop.

Another thing, I have been informed that a considerable quantity of charcoal is used in some sections of the country. We have large quantities of timber suitable for being converted into this commodity. If you can put us in touch with these situations you will confer a great favor on these people.

Knowing your interest in the South, especially under the present conditions, I have taken the liberty to make this request of you.

W. M. MOORE.

Big Drainage Contract.

A contract for excavating work, amounting to 5,110,754 cubic yards of open drainage ditches, has been awarded to R. G. & G. A. McWilliams of Chicago by Drainage District No. 2 of Crittenden county, Arkansas. The Messrs. McWilliams received the contract at \$448,227.65 for the work to be completed within two years. They expect to install six floating dredges, and in accepting the contract were able to furnish the county with a bidder for the bonds at par for the cost of the work.

Every important piece of work of this kind that can be done at present enlarges the employment of labor and betters the whole situation.

To Discuss Foodstuffs for Georgia.

Merchants and farmers of Southwest Georgia will meet in the Chamber of Commerce at Albany January 28 for a discussion of the problem of raising and standardizing the marketing of food and feed crops to be raised by Georgia farmers in 1915 on acreage formerly planted to cotton.

GOOD ROADS AND STREETS

CONVICTS IN ROAD WORK IN CAROLINA.

By FRED A. OLDS of Raleigh.

About 60 of the 100 counties in the State are building real highways and using convicts in the work, some employing also free labor, which is higher, and some taking convicts from counties which are not building roads, but which stick to the old-fashioned plan, if it can be dignified by the name of plan. No doubt some of the readers of the MANUFACTURERS RECORD have seen a road built in the old style. Along comes a man with a two-horse plow, making furrows in the highway as if a crop were to be planted there. Some dirt is thrown in from the rudely excavated ditches on each side. If there is a large depression some bushes are cut down and thrown in it and rudely covered with dirt, and there is your road! The few counties which are sticking to this sort of a road are not gaining in population, but the road-building ones are gaining every day, while people from near and far are coming to know that this State is creating real highways.

Convict labor, which has built two-fifths of the State's railway mileage, has built perhaps nine-tenths of the good roads. It was North Carolina which first employed its State convicts in grading railways, including tunnels, and it was exactly 40 years ago that the first convict work in this line was begun. A couple of hundred were employed in grading what is now the Asheville & Spartanburg Railway, from the North Carolina line toward Asheville, and in five years they had finished it and the road was in operation from Spartanburg to Hendersonville, then a tiny mountain town, almost unknown. The same year, 1874, the State employed about 800 convicts on the grading and tunneling of the railroad between Old Fort and Asheville, now one of the most attractive parts of the great Southern system. By the 6th of July, 1879, the convicts had finished the greatest of all the tunnels, the Swannanoa, at the crest of the Blue Ridge, and trains were working out both ways from this. This showed the State what convicts could do, and they built the former road on into Asheville, and the one last named from Asheville all the way to Murphy, near the Georgia line.

The convicts have built dozens of other railroads, long and short, and they are now at work on five at the same time, the longest of these being between Statesville and Mt. Airy, and two others being designed to cross the Blue Ridge so as to get into the railroadless counties of Alleghany and Watauga. The work on both roads is well up the Blue Ridge, the convict forces on them both having been recently trebled, so that these mountain climbers will be over the hills before Governor Craig's administration ends, and the tourist and the developer will have two new fields of effort and satisfaction before them.

About 30 years ago there was brought about a division of the convicts into two classes, State convicts and county convicts, the counties having exclusive jurisdiction of the latter class, with power to use them on the highways and also power to hire them or secure them in any way from counties which are not engaged in building roads, so that some counties get convicts from several others. As has been stated, some counties use both convict and free labor, in separate gangs or forces, as they are not mixed.

There are less than 900 State convicts, but there are about 2300 county convicts. Among the latter, it is very easy to see, are found the most able-bodied, for the live counties make it quite a point to have effective road workers. The counties are, in fact, proud of them and so are the people, for the latter get exactly what they want more than anything else, and at the same time see the convicts doing public improvements and earning their way, yet not coming into competition with any free labor whatever—a splendid solution of one of America's biggest problems right here in little North Carolina, which some people, forsooth, have thought to be and term a "back number."

Well, this State has shown how to handle State convicts and county ones, too, and how to build roads cheaply and effectively. The head of the school of highway engineering of Harvard University rode all day long over the Moore county roads and declared them to be just as good, though they cost only \$300 a mile, as

the Massachusetts roads, which cost \$6000 a mile. He declared that this experience was the most interesting one he had during his trip through the South. Moore county has 300 miles of such highway, and within a radius 60 miles of Pinehurst there are 1600 miles of similar roads.

The cost of the convict labor in building highways under this county system is found to be but little more than half that of free labor. Counties, like the State, feed, quarter, guard and otherwise provide for their convicts, for the lease system has happily never obtained in this State.

Another important thing has been shown, this being that with a little instruction and supervision the county convicts are able to build concrete culverts and bridges at about a third of the cost which is charged ordinarily. The general supervisor of the public roads in Wake county tells me of a case in point. He asked for estimates of the cost of constructing a reinforced concrete bridge 25 feet long and 30 feet wide on the Capital Highway near the boundary of Raleigh. The lowest bid was \$2100. He and his convicts built it for \$712, and a fine bridge it is to look at and to use.

The convicts are proud of the roads they build. It is a common thing when they finish a fine highway for the people of the section to give them a barbecue, a typical Southern dinner, with plenty of "trimmings." On such occasions the writer has heard convicts speak to the assemblage and say that though they were prisoners, they felt proud of the public work they had done. Indeed, they showed this clearly.

North Carolina has this year gone into highway building itself, for the last Legislature provided for the construction of two splendid roads, one through the Hickory Nut Gap, the other in Madison county. In the latter county there is a small population and a comparatively small amount of money possible, the heavy cost of grading being the main obstacle. The same condition exists in the Hickory Nut Gap, which this road, admirably built, will open to tourists, this being the grandest canyon east of that of the Colorado.

Here, then, in a nutshell is the story of some of the things North Carolina is doing. Any other State which is puzzled by either problem, that of the proper use of convict labor or that of road building, can come here and get points. The discovery of the two things or forces, thus joined together, the sand-clay highway and the convict builders of it, will soon make North Carolina one of the first-rank States as to good roads. This means progress in a hundred other ways, for the good road is a State, county, community and home builder all at the same time. The good road touches the pocket-nerve, because inevitably it increases property values. Good roads have taught people more about their own counties and State than all the railroads yet built, and they have enlarged the boundaries of friendship, helped the public schools and churches and made intercourse possible and easy which was undreamed of a dozen years ago.

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Sanford, N. C.—Lee county voted \$100,000 bonds to construct roads.

Bonds to Be Voted.

Carlisle, Ky.—Nicholas county votes March 28 on \$125,000 bonds to construct roads.

Dover, Tenn.—Stewart county votes February 6 on \$100,000 bonds for road construction.

Maysville, Ky.—Mason county votes April 10 on \$200,000 bonds for road construction.

Parkersburg, W. Va.—City votes February 2 on \$200,000 bonds for street paving, etc.

Contracts Awarded.

Emmitsburg, Md.—State awarded \$13,282.10 contract to construct 1¼ miles of road.

Corpus Christi, Tex.—City awarded \$18,000 contract to construct macadam road surface across causeway.

Jackson, Miss.—City awarded contract to resurface Capitol street; cost about \$6000.

Louisville, Ky.—City awarded \$7950 paving contract.

North East, Md.—State awarded \$6031.80 contract to construct road.

Quitman, Ga.—City awarded contract to construct 25,000 square yards of asphaltic concrete paving and sidewalk paving; \$100,000 available.

Richmond, Va.—City awarded \$20,000 paving contract.

Terrell, Tex.—O. F. Walton Lumber Co. has \$3497.50 contract to construct sidewalks, etc.

Tuskegee, Ala.—City awarded contract to construct 10,000 feet of curb and gutter.

Wadesboro, N. C.—Anson county awarded contract for about six miles of road; cost \$8000.

Contracts to Be Awarded.

Devall Bluff, Ark.—Prairie County Road Improvement District No. 1 will build 13 miles of stone road; cost \$60,000.

Fort Smith, Ark.—Sebastian county will build 2½ miles of boulevard; cost \$8000 to \$9000.

Gainesville, Tex.—Cooke county will improve roads; \$50,000 loan available.

Galveston, Tex.—City receives bids until January 21 to construct 21,300 square yards of vitrified brick pavement.

Houston, Tex.—Harris county decided upon improvements for 40 miles of roads.

Louisville, Ky.—City will reconstruct portions of two streets; estimated cost \$5500.

Marshall, Tex.—City receives bids until January 26 to construct about 9000 square yards of asphalt macadam or asphaltic concrete pavement, with concrete curbs, gutters, etc.

Miami, Fla.—City will lay 6000 feet of concrete sidewalk.

Palo Pinto, Tex.—Palo Pinto county will improve roads in Road District No. 1, aggregating 36.7 miles on nine roads.

Richmond, Va.—Henrico county receives bids until February 1 to construct 4½ miles of gravel highway.

Salisbury, Md.—Elmer C. Williams will build about one mile of cement pavement.

Somerset, Ky.—Pulaski county will construct highway; \$61,000 available.

Tavares, Fla.—Lake county will construct 200 miles of road work.

Financing Improved Highways.

United States Treasurer John Burke is taking an active part in the good-roads movement, and has accepted the office of treasurer of the American Highway Association to succeed the late Lee McClung. Mr. Burke in taking up his duties emphasized the fact that many of the most serious questions in connection with the obtainment of better roads were those connected with taxation and finances. An annual outlay of \$225,000,000, such as we now have, calls for the utmost care and thoroughness to prevent waste, misappropriation and injudicious expenditures.

"In the matter of bond issues," says Mr. Burke, "I understand that the practice has been very general of issuing bonds for very long terms and expending the proceeds on roads which have a comparatively short life, so that the debt outlives the utility. I understand also that there is considerable laxity in the matter of retirement of bonds. In a great many sections of the country little or no attention is paid to the relative merits of the serial bond and the fixed term bonds,

which are retired by a sinking fund. As a matter of fact, it can be mathematically shown that in many cases a serial bond will result in a marked saving to the public."

On account of the fact that many Legislatures will be in session during the winter, the association will direct its efforts toward securing revision of road laws and the adoption of such new legislation as will tend to promote simplicity and efficiency and at the same time safeguard the handling of public funds. Mr. Burke has as his colleagues in the management of the American Highway Association Fairfax Harrison, president of the Southern Railway, president; Logan Waller Page, director of the United States Office of Public Roads, vice-president, and James S. Harlan, chairman of the Interstate Commerce Commission, chairman of the board of directors.

Plans of Lake County, Florida.

Lake County Commissioners, Tavares, Fla., have detailed plans for constructing 200 miles of highways in their county, the date of opening bids having been postponed from December 31. They intend to invite proposals within 60 days, and the J. B. McCrary Company of Atlanta is the engineer. The work may be briefly outlined as follows: 1,091,046 linear feet of roadway; 329,630 cubic yards of excavation; 1,147,610 square yards of pavement; 301.62 cubic yards of concrete; 1554 pounds of square deformed steel; 5146 pounds of reinforcing concrete steel; 885 linear feet of terra-cotta drains; 57 bridges, etc. Three classes of surfacing are proposed, these being sand-clay, sand and asphalt (modified asphalt) and oiled macadam. It is probable that sand-clay will be adopted for lateral roads and the other two classes of construction for main and semi-trunk highways, with oiled macadam for highways having the heaviest traffic.

Montana's Phosphate Field.

Summarizing the results of an examination of the Elliston phosphate field in Montana by R. W. Stone and C. A. Bonine, a bulletin of the United States Geological Survey says:

"In the south half of the Elliston field the phosphate bed stands nearly vertical along about two miles of its outcrop, but near Elliston it is so faulted that an estimate of the area underlain by it is difficult. On the assumption, however, that this part of the field contains the equivalent of three miles of outcropping bed that could be mined to a depth of half a mile, there is in the south half of the field one and one-half square miles underlain by phosphate; and as the few measurements in this part of the field suggest an average thickness of four feet, an estimate is possible of 15,204,864 tons of phosphate rock in the south half, making a total of more than 86,000,000 tons in the whole Elliston field.

"The phosphate in the south half of the Elliston field is within two miles of the Northern Pacific Railway, and readily accessible to it. The farthest point in the northern part of the field is between six and seven miles from the railway by way of Dog Creek valley, down which there is an easy grade.

"Rock phosphate is used in the manufacture of fertilizer. In the process the rock is finely ground and mixed with a nearly equal part by weight of sulphuric acid. The result of this mix is an acid calcium phosphate which, when dried and pulverized, is the substance sold as superphosphate. In this form the phosphoric acid is more readily available as a plant food than it is in the original or raw state.

"There has been no development of these deposits owing to their recent discovery and to the lack of markets sufficiently near to justify mining and reduction. The demand for fertilizer products in the Western States is not large, owing to the lack of intensive cultivation and the newness of the agricultural lands; but there is a growing tendency to use fertilizer where the land is farmed extensively, especially in the Middle West. The western phosphate deposits are favorably situated to meet a demand from this section of the country, and will probably be utilized in the future."

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

MORE TUNNELS FOR BALTIMORE.

Pennsylvania Railroad Proposes to Parallel Tubes to Relieve Traffic Congestion.

A new proposition for the improvement and enlargement of its facilities in Baltimore has been submitted by the Pennsylvania Railroad to Mayor James H. Preston. This refers particularly to the handling of through trains, both passenger and freight, and includes plans for the construction of two more tunnels paralleling the existing tunnels of the railroad through the city. One of the new tunnels would be under the bed of Preston street east of Union Station, and the other would be under the bed of McMechen street west of the depot. The first would be from half a mile to three-quarters of a mile in length, and the second about a mile and a half long. It is also contemplated to construct a short four-tracked tunnel between Union and Calvert stations to facilitate the handling of traffic between them, as well as to provide direct entrance to the proposed tunnel east of Union Station. The longer tunnels will have double tracks.

In connection with the construction of the tunnels and some rearrangement of its yard tracks the railroad company asks that the city give to it the ground adjoining its old passenger engine-house near Union Station, which ground was formerly the bed of Jones' falls, that stream having been recently diverted to the tunnel which was built by the city as part of the falls improvement. The ground thus acquired could be utilized in the changes which the railroad contemplates there. It is further asked that the franchises for the tunnels be granted without compensation, provided that the railroad cover Jones' falls from the falls tunnel at Guilford avenue to Maryland avenue alongside of the Union Station property a distance of four blocks. The railroad would have the right to build tracks over the covering when completed and whenever desirable to do so.

The plans, which would demand several millions expenditure, will be fully considered by the city authorities, and some time may elapse before a reply is given. The Pennsylvania Railroad also has in contemplation an extensive improvement and rearrangement of its Calvert Station freight and passenger terminal at a cost of several millions of dollars, as heretofore published, although this plant has hung fire owing to differences with the city, which insists that the improved Calvert yards shall be operated with electric locomotives to lessen the amount of smoke in their vicinity. Steam locomotives using anthracite coal are now employed there.

This new suggestion by the railroad that it build additional tunnels to handle traffic through Baltimore comes as a substitute for other plans considered. Several years ago it was proposed to construct a double-tracked detour line through Baltimore county north of Baltimore city, but serious objections to this were raised by owners of country places there as well as by residents of suburban towns, and it was dropped. A second and more costly plan was to dig a tunnel under the Patuxent River just below the entrance to Baltimore harbor and send through freight by that route, connecting with the main line both north and south of the city. The new proposition of additional tunnels would solve the freight-train problem, but all this and other traffic would have to pass through the Union Station yards, which the company by the former plans proposed to avoid.

The need for enlargement of through tracks is imperative, it is alleged, the present tunnels being much overcrowded now with business.

Rails and Equipment Bought.

Orders have just been placed by the Nashville, Chattanooga & St. Louis Railway for 3000 tons of steel rails, which will represent an outlay of approximately \$125,000. They are to be used on the Western & Atlantic Railroad, which the company operates under lease from the State of Georgia, and much of the rail will be devoted to renewing the tracks between Cartersville and

Atlanta. It is announced that the management will, as hitherto, keep the roadway up to the high standard maintained on the main lines. The rails were ordered from the Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

The 16 new locomotives which the Nashville, Chattanooga & St. Louis Railway lately ordered from the Baldwin Locomotive Works of Philadelphia will be ready for delivery within three months, according to the contracts. Ten of the engines will be of the Mikado type for handling freight trains, while the other six Pacific type engines will be for the passenger service. The contracts for this new motive power will necessitate the expenditure of \$300,000. With the putting into service of the new engines several of the big locomotives which have been used for several years will be given a general overhauling at the company's shops.

\$1,500,000 TO BE SPENT.

Southern Railway Will Let Another Contract for Revision and Second Track.

The Southern Railway will proceed at once to revise and double-track the 28.7 miles of its Washington-Atlanta line lying between Orange and Charlottesville, Va., the work to involve an expenditure of \$1,500,000 and to result in a greatly improved line both as to grades and curvature. Bids for the grading are being received from contractors in the office of W. H. Wells, chief engineer of construction at Washington, under whose direction the work will be done.

The completion of this improvement, together with other work now under way, will give the Southern a continuous stretch of 121 miles of double track out of Washington and a total of 338.7 miles of double track between Washington and Charlotte, leaving only 41.3 miles of single track, divided into four stretches, the longest of which is 20 miles.

The revision between Orange and Charlottesville will eliminate 1303 degrees of curvature and will give a maximum grade northbound of 0.9 per cent, and southbound of 1 per cent, as against 1.41 per cent, in both directions at present.

The work to be done is very heavy and will furnish labor for a large number of men and cause heavy expenditures in the territory immediately affected. The necessary capital was provided before the outbreak of the European war.

PALM BEACH-EVERGLADES RAILWAY.

\$1,000,000 Enterprise to Develop Country in the Region of Lake Okeechobee.

H. G. Geer, vice-president of the Palm Beach-Everglades Railway Co., Box 208, West Palm Beach, Fla., says that it has applied for charter and has opened offices in the McGinley Building there. It is intended to push construction as soon as authority is given to do business. Furthermore, he adds: "This road will furnish the one necessary thing to develop the 'Glades' and open a gateway at West Palm Beach." Steam will be used for motive power, and the line will be constructed during this year. Contracts for construction will be awarded later. The route lies through level country. There will be no bridges of importance. Connection will be made at West Palm Beach with the Florida East Coast Railway.

T. J. Campbell, treasurer, furnishes the following list of directors: Chas. H. Baker of New York, president; H. G. Geer, vice-president; Thos. J. Campbell, treasurer; W. H. DuCamara, secretary; James A. Moore, general manager; T. T. Reese, J. B. McGinley, Geo. G. Curris, H. P. Dye, M. E. Gruber, Geo. W. Potter, Geo. O. Butler and Geo. B. Baker, all of West Palm Beach; M. B. Lyman of Lantana, W. M. Butterworth of Miami and R. J. Bolles of Jacksonville, Fla.

The published charter, for which application has been made, shows that the proposed line will run from West Palm Beach westerly to a point six or eight miles from the shore of Lake Okeechobee; thence south, southwesterly and northwesterly parallel with the shore of that lake to a point at or near the shore of Lake Hicopochee, the line to be about 75 miles long. Capital stock is

\$500,000. Its indebtedness is limited to a total of \$1,000,000.

Although it is stated officially that steam will be the motive power, the charter would give the company the right to also use either oil, gasoline or electricity. It may likewise have telegraph and telephone lines, wharves, docks and warehouses, and drays, omnibuses, stage coaches, steamships or other vessels, the latter to act as feeders to the railroad. Authority is also asked to deal in real estate, including farm lands, townsites, etc., and to conduct commissary stores and any other kind of commercial enterprise.

Chas. H. Baker and James H. Moore are named as holding 1250 shares each, and T. J. Campbell, W. H. DaCamara and W. M. Butterworth 622 shares each, the other directors having small amounts of stock.

MOBILE & OHIO BRIDGE AT CAIRO.

Projected Improvement Which It Is Estimated Will Cost About \$2,500,000.

A recent report from Cairo, Ill., says that the Mobile & Ohio Railroad will immediately begin buying land for the approaches to its contemplated bridge over the Ohio River, which will cost, complete, it is estimated, about \$2,500,000. W. H. Wells, chief engineer of construction of the Southern Railway, with which the Mobile & Ohio is affiliated, has visited Cairo, it is stated, to inspect a tract of between 35 and 40 acres that is wanted; also about an equal amount of land on the Kentucky side of the river. The city will be asked to vacate some land also needed. He will confer, it is further said, with a United States Government engineer at Cincinnati, whose district will include the proposed bridge, concerning the projected improvement.

R. V. Taylor, vice-president and general manager of the Mobile & Ohio Railroad, says, however, that no definite plans have been agreed upon for the erection of the bridge. Furthermore, according to official information during the last six months, the railroad company has been studying the situation at Cairo for some time, and therefore it appears as if the subject was nearing a decision. At present the Illinois Central Railroad bridge is used by Mobile & Ohio trains.

STARTING AN INTERURBAN LINE.

Florida Enterprise Will Ask for Charter After Some Work Is Done.

Construction of an electric interurban railway from Jacksonville to Middleburg, Fla., 24 miles, has begun, according to a report from Jacksonville. Grading has started at a point about 10 miles out of there, and A. W. Mackinlay, general manager and chief engineer, is quoted as saying that sufficient money, etc., has been provided to complete the line from that place into Jacksonville, and then there will not be any trouble to finance the rest. Grading is being done by the company and by people along the right of way. When some progress has been made with construction, application will be made for a charter. C. G. Wilson is treasurer, and Haley & Heintz are attorneys for the temporary organization that has been formed. About half a mile of line is already graded. Right of way for the entire road has, however, been secured. It is said that it will provide rapid means of transportation for a good farming section which is now served only by boats and wagons.

Bridge Contract Awarded.

The Gulf, Florida & Alabama Railway Co. is reported to have awarded a contract to the American Bridge Co. for the erection of its bridge over the Alabama River near Pine Hill, Ala., where the new line will connect with the Southern Railway.

The Macon-Atlantic Navigation Co., A. J. Long, president, is reported to have awarded contract to J. S. Schofield Sons of Macon, Ga., for a shallow draught barge designed by the Russell B. Smith Company of New York, to be operated on the Ocmulgee River from Macon to the sea.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Austin Needs a Cotton Factory.

William G. Bell, manager of the William G. Bell Brokerage Co. of Austin, Tex., in a letter to the MANUFACTURERS RECORD, referring to the hydro-electric power to be developed at the big dam across the Colorado River at Austin, says:

"Austin is in the midst of the great cotton-growing section of Texas. Our county alone produces over 60,000 bales annually, Williamson county, adjoining Travis, being the banner cotton-growing county of the world, producing over 100,000 bales annually. Probably in the six counties adjoining Travis from 300,000 to 500,000 bales of cotton are grown each year. Austin needs a cotton factory. If you know of parties who have capital or can command financial backing for such a proposition we would like very much to get in touch with them. Austin will do her part in raising the necessary funds."

The Cotton Movement.

In his report for January 15 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 168 days of the present season was 8,985,003 bales, a decrease under the same period last year of 2,286,024 bales. The exports were 3,086,029 bales, a decrease of 2,792,026 bales. The takings were, by Northern spinners, 1,371,732 bales, a decrease of 363,445 bales; by Southern spinners, 1,799,069 bales, a decrease of 207,746 bales.

Holding Back Cotton.

Up to January 1 this year 14,447,623 bales of American cotton were ginned, or 1,099,902 bales more than were ginned up to January 1, 1914. Nearly as large a proportion of the 1914 crop as that of the 1913 crop was ginned up to January 1. But of the 1914 crop ginned, only 7,835,861 bales, or less than 55 per cent., had come upon the market by January 1, while in the same period of the preceding season the movement into sight was 10,476,907 bales, or 78 per cent. of the quantity ginned.

Textile Notes.

J. K. King and Hubert Murray, Columbus, Ga., plan the organization of a company to establish a knitting mill with a daily capacity of 250 dozen pairs of hosiery.

Old Dominion Knitting Mill, Williamsburg, Va., has been incorporated with \$15,000 capital stock. John McGinnis is president and Edmund Fain is secretary-treasurer.

Henrietta (N. C.) Mills will, it is reported, install a large number of automatic looms. The present equipment of this company includes 75,000 ring spindles and 1872 looms.

Icard (N. C.) Manufacturing Co., authorized capital stock \$125,000, has been incorporated by D. B. Null, Stanley Ferry and A. L. Wilson, all of Connelly Springs, N. C.

Kershaw (S. C.) Cotton Mills, completed last year, operate 10,336 spindles, 250 looms, 19 cards, etc., for manufacturing cotton cloth. Main building, 480x129 feet; boiler-room, 48x40 feet; engine-room, 38x46 feet, and three-section warehouse, 52x101 feet each. About 100 operatives are employed. R. C. Biberstein, Charlotte, was architect-engineer for the plant. Machinery was furnished as follows: Cards, Saco-Lowell Shops, Lowell, Mass.; spinning frames, Fales & Jenks Machine Co., Pawtucket, R. I.; looms, Draper Company, Hopedale, Mass.

About \$12,000 has been invested by the Taylorsville (N. C.) Cotton Mill Co. for its enlargement improvements previously announced. Production will be increased from 18,000 to 22,500 pounds weekly, with 7200 spindles or an equivalent of 14,400 spindles turning

night and day. The improvements, now completed, include erecting a 22-foot extension to building and installing new machinery as follows: Six spinning frames; 4 cards; 8 deliveries drawing; slubber piece-outs; intermediate frame; fine frame; 100-spindle winder. This installation provides a maximum production without adding to picker-room.

Southern Building in 1914.

Figures relating to building operations in several Southern cities during 1914, which were not available for the building review as published in the MANUFACTURERS RECORD of January 14, have since been received. In Memphis, Tenn., a total of 2620 permits was issued during the year, representing a cost of construction of \$2,946,818. The number of permits and cost of construction by months are as follows: January, 226 permits, \$361,390; February, 232, \$275,455; March, 279, \$370,300; April, 288, \$420,085; May, 232, \$304,695; June, 252, \$283,012; July, 261, \$333,006; August, 173, \$175,660; September, 163, \$132,160; October, 154, \$105,580; November, 172, \$133,275; December, 88, \$52,200. Permits were issued by the engineering division of the city government of New Orleans, La., during the year to the number of 1310, governing the construction of new buildings estimated to cost \$2,745,031, and 325 permits for additions, alterations and repairs to cost \$203,720. A total of 148 permits was issued in Hot Springs, Ark., representing a cost of construction of \$813,500. The number of permits and the cost of construction by months are as follows: January, 35 permits, \$77,200; February, 20, \$94,000; March, 6, \$19,850; April, 15, \$40,700; May, 15, \$224,500; June, 10, \$25,500; July, 15, \$196,000; August, 8, \$58,000; September, 7, \$1200; October, 8, \$36,200; November, 5, \$7350; December, 4, \$33,000. The value of buildings completed in Texarkana, Ark.-Tex., is estimated at \$632,000 instead of \$232,000, as appears in our review last week.

A \$500,000 Sand and Gravel Company.

Chartered with a capital stock of \$500,000, the Virginia Sand & Gravel Co. of Petersburg succeeds the Norfolk Sand & Gravel Co. and will undertake extensive developments. This company owns, in addition to sand deposits of the old company, about one square mile of gravel deposits on the Appomattox River near Petersburg, where it will build a plant to mine and wash gravel, the daily capacity to be 500 cubic yards. It will add to the present fleet of barges, tugs, dredges, etc. Officers have been elected as follows: George W. Roper, president; Wm. B. Roper, secretary; Marvin D. White, assistant treasurer, each of Norfolk; W. W. Lanahan, vice-president; Henry L. Duer, treasurer and assistant secretary, both of Baltimore.

Parkersburg Board of Commerce.

The stockholders of the Parkersburg (W. Va.) Board of Commerce have elected J. Mentor Caldwell, president; E. O. Bower, first vice-president; H. H. Archer, second vice-president, and H. H. Dils, W. A. Hersch, E. L. Davidson, W. C. McConaughy, C. P. Dudley, E. M. Gilkeson, T. R. Cowell, J. Loyal Gilbert, A. E. Kenney, A. B. White, John Romine, P. D. Neal, Dr. G. D. Jeffers, A. B. White, A. B. Smith, F. Fowler, B. R. Blackford, O. S. Hawkins, H. H. Archer, D. B. Crawford, J. S. Broida, Thomas Logan, Joe Murphy, John Marshall, J. R. H. Radeker, H. P. Camden, T. E. Graham, E. M. Bryant, W. L. Mengert and Jos. Stern, directors.

Mingo Block Coal Corporation.

Organization has been effected by the Mingo Block Coal Corporation, Columbus, O., recently mentioned as chartered with a capital stock of \$2,000,000. This company contemplates constructing two plants, with daily capacity of 1500 to 2000 tons of coal each, in connection with the development of 8000 acres of land in Mingo county, West Virginia. Its officers are: E. T. Hitchman, president, Wheeling, W. Va.; J. C. Simpson, secretary, Moundsville, W. Va.; George S. Sarver, treasurer, Greensburg, Pa.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Egypt Seeks American Products.

Victor Chr. Pavlides, B. P. 867, Alexandria, Egypt, writes to the MANUFACTURERS RECORD as follows:

"I am disposed to undertake American agencies for manufacturers or exporters on the commission basis. The articles I am interested in are: Flour; grocers' articles; canned goods, such as meats, roast beef, corned beef, mutton, veal, sausages, fish, salmon, mackerel, etc.; butter; marmalades; mustard; fruit; California pineapples; pears; in general, everything preserved or conserved in tins; confectioners' articles; chocolate, caramels; biscuits; pharmaceutical articles and medicines; cotton, woolen, silk and linen goods; hats; cloth; shirts; collars; neckties; flannels; underclothing; boots and shoes; gloves, etc. Santos coffee and pepper and every article of commerce may be undertaken, and exporters have but to write me in detail, sending their samples, with quotations always Alexandria and Port Said, terms of payment, conditions and my commission.

"There are two things essential to which I must draw your attention for being able to introduce American goods. The first and most important is that almost all American firms or exporters have the habit of asking for payment there with a credit open at a bank, and if I could not until today undertake American houses it is because this kind of payment is not at all used here in our markets, as clients were accustomed by Europe to pay not only against documents (on arrival of goods), but with great credits of 4, 6, 9 and 12 months, especially on clothes and all these goods. Now certainly war conditions have changed things and credit remains only in rare cases, but for cash payment is always against documents at a bank here. Your places being so far, and as it takes long for goods to arrive here, the client does not decide to give orders. So if American houses will advise other Americans who have permanent stocks in Europe, especially in England, then the affair would be facilitated in a great degree, as I might communicate with their agencies there and receive goods promptly. I am in search of a good house for California plums, and could do considerable affairs for them."

Various American Products Wanted.

J. M. Schapira, Government contractor and manufacturers' agent, Athens, Greece, writes to the MANUFACTURERS RECORD as follows:

"Exclusive agencies and quotations required for immediate or quickest delivery of following articles for Government and private supply. Prices f. o. b. New York, payment half in New York and half against documents in Piraeus. Prices to include usual agent's commission. War insurance extra: Trinitrotoluol, trinitrophenol, acetone, antimony metallic, nitrate de potasse, gun cotton, glycerine Nobel and camphor, for dynamite and powder manufacturing. Oleo stearine for candle manufacturing 48/50°, quality about 1:40/0/0 per tone, c. i. f. Piraeus. Also iron tubes and pipes for gas, steam and water; manila ropes; pig lead and acetanilid. For these articles specifications will be sent on demand: Pig-iron; copper in sheets; brass metals; brass tubes; copper tubes; tin plates; galvanized flat and corrugated sheets; black plates; steel rails; iron hoops for barrels and casks; steel plates for shipbuilding; galvanized mild steel iron ropes; galvanized mild iron ropes; wire for nail manufacturing."

Paris Engineer Wants Agencies.

Michel Le Page, ingenieur, 3 Villa Primevere-Arenes, Bayonne, France, writes to the MANUFACTURERS RECORD as follows:

"I have copy of your interesting MANUFACTURERS RECORD. I shall take great pleasure in referring to and mentioning your journal in my correspondence with

people whose addresses I find in that publication. I give you below a list of the kind of goods that interest me and which will find ready sale in France and Belgium. I would be glad to look after them in the capacity of agent on commission. I am giving you below references of German firms which I represent and with which I can continue my commercial relations. The state of affairs now furnishes the reason for which I am compelled to look for agencies for American firms in these lines. I have been acting as agent at this place for about nine years. My field of action comprises the department of the east and the north of France, and also that of the Seine, as well as all of Belgium, and I have a very large clientele in those districts. I am 38 years old, and am manufacturing engineer. Myself and family are at Bayonne temporarily, and anticipate returning to Paris in January. There at Paris I have a well-organized force and nicely-equipped office. The lines of goods in which I am interested are: Machines and equipment for textile industry; operating mines of different kinds; sugar-refining machines; electrical apparatus and equipments in general. References: Allgemeine Elektrizitäts-Gesellschaft A. E. C., Berlin. Humboldt Maschinenfabrik Akt. Ges., Kalk-Cohn, etc."

Rubber and Vulcanite Products.

C. O. Schimmer & Co., 93 Aldersgate street, London, E. C., England, write to the MANUFACTURERS RECORD as follows:

"We are looking for small vulcanite articles made chiefly of molded vulcanite, such as spray producers, nasal olives, vulcanite and glass syringes, etc. Nobody is making these here in England at present, and things cannot be got from Germany. There would be a good opportunity for an enterprising manufacturer to get hold of this business. If you could put us into communication with such manufacturers we would be able to let them have samples and instruct them in what is required for the market here. We will from time to time tell you of any other lines that come our way which would be suitable for American manufacturers. There is also a large trade to be done in India rubber goods made by dipping molds into rubber solution, which was also practically in the hands of the Germans up to now, and for which the manufacturers of this country are very badly equipped with regard to machinery. We refer especially to transparent teats, India rubber preservatives, India rubber globes which we understand are already being made in America, India rubber bathing caps, etc. These articles require, if they are to be produced cheaply, an extensive plant, as they are made by having rows of glass molds in the shape of the articles required on drums which are turned by machinery and dipped into the rubber solution. Also, the great secret of it is that the rubber solution is prepared properly."

Wants American Manufactures.

C. D. Davies, manufacturers' agent, P. O. Box 163, Kingston, Jamaica, B. W. I., writes to the MANUFACTURERS RECORD as follows:

"I am interested in American manufactures. Hitherto Germany and Austria were my largest markets, but the great European war has completely dislocated and disorganized the trade, and while I represent firms in every State in Europe, there are kinds of merchandise in which the two countries mentioned excelled on account of their cheapness and the great facilities offered. I am now directing my energies to American wares, and if our people will only move energetically and not sleep over the situation, which, sorry am I to say many of them are doing to their own detriment, the present is the greatest opportunity in the history of trade and commerce for them to acquire business that was impossible for them to secure under normal conditions. I have the largest showrooms in the West Indies, and represent a great number of firms. The National Association of Manufacturers, New York, and the Philadelphia Commercial Museum of Philadelphia have been of infinite assistance to me in my new work, and I shall be glad to have you extend to me the same good offices of your institution. I may mention that I am an American citizen myself, and have been engaged in this special business as manufacturers' agent for 25 years, am known throughout the entire West Indies,

and have at various times toured these markets and established connections in all of them."

Wanted for France.

J. Fritsch, 11 Blvd. Rochechouart, Paris, France, writes to the MANUFACTURERS RECORD as follows:

"We received a copy of the MANUFACTURERS RECORD, and thank you for sending this to us. Among the names of firms and corporations which we find published in it there are to be found a great many whose products are of special interest to us. We are sure that under the present circumstances it will be possible for American manufacturers to establish permanent, important and profitable commercial relations with our people. We take the liberty of asking you to get the name of our firm before your manufacturers, especially such as desire to place their goods in France. So far as manufacture is concerned, we have a long list of good and firm friends in business throughout France. Our leading line is metals, electricity and equipments and appliances relating to that line. We would be very happy to act as representative agent for American firms producing goods such as referred to above, and could take the place heretofore occupied by German houses. Will you be kind enough to do us the favor of letting us know the cost of an advertisement in the columns of the MANUFACTURERS RECORD. We want to make such an insertion there for the purpose of getting your American manufacturers who are willing to make exports to France of iron manufactures, electrical machines, manufacturing machines, tools, supplies and equipments for street railways, and also for steam railways."

Chemicals, Dyestuffs, Etc.

I. Slobatsky, 3a San Augustin No. 73, Mexico City, writes to the MANUFACTURERS RECORD as follows:

"While I have heard from some sources that there is a scarcity of dyestuffs in your country, I have been informed by others that certain dyes are being manufactured over there, and I should be glad if you would let me have some information with respect to this matter. I am a cash buyer for fair prices of direct and sulphur dyes, in particular blacks and blues. If these goods are available there it is probable that business would result. As regards the outlook for selling American goods in this country, I beg to say that the moment is especially favorable for manufacturers to open connections in Mexico. As far as my line of business is concerned (chemicals and dyestuffs), I am prepared to purchase for spot cash. As to other articles I am prepared to accept agencies of good makers, if such are to be had at reasonable conditions. If you know of manufacturers anxious to get into touch with the local trade I should esteem it a favor if you would cause them to communicate with me. I am only interested in large business, and small fancy lines are not what I am looking for."

Iron, Steel, Tubes, Piping, Etc.

Hugh Girvan, 120 Cannon street, London, E. C., England, writes to the MANUFACTURERS RECORD as follows:

"The business I am desirous of cultivating is in iron and steel billets, sheet bars, wire rods, wire, wire nails, bars, plates, beams, channels, angles, tees, floor plates, bedstead angles, light rails, black and galvanized sheets, cold-rolled steel bars and strips, bolts, nuts, spikes, rivets. Wrought-iron tubes for gas, water and steam. Cast-iron underground pipes for gas, water and drainage. If I can be of any service to you in this country, kindly let me know and I will do my best to give you any information you may require."

Spain Wants Machinery.

Navas & Co., engineers, Madrid, Spain, write to the MANUFACTURERS RECORD as follows:

"Our idea is to get the agency for the exclusive sale of various articles in the machinery line to Spain. Among others are the following: Gasoline motors; windmills; pumps; cement-making machinery; stone breakers; machinery for making fine plaster; pressers for making brick out of cement; equipments for boring

artesian wells; mining machinery and accessories; machinery for treating vegetable fiber—and, in fact, machinery of all kinds. Our firm was established by manufacturing engineers, and is under the supervision of the Central School of Manufacturing Engineers of Madrid. We have traveling agents going over the whole of Spain, and local agencies in the principal capitals of the country. We would like to get the agency for all of Spain in the above line, and also for the Spanish possessions in Africa. People interested can get commercial references as to our standing from any of the leading houses at this place, also from the leading banking establishments."

Market for Food Products.

Office Colonial de Representation Commerciale, Maison McCary, Pointe-a-Pitre, Guadeloupe, writes to the MANUFACTURERS RECORD as follows:

"I am looking for the opportunity to enter into direct commercial relation with American manufacturers who would like to find a market for their goods in this colony. My principal occupation is handling food products, and any article in that line is of interest to me. I can get from a miller, who is in a position to pay a fair price, orders for flour and bakers' supplies, all grades, to the extent of a monthly sale of from 30,000 to 40,000 sacks of flour. Cottonseed oil, petroleum oil, salted and canned meats, olive oil, butter, corn in the grain, biscuit and cake are all in ready demand, and if your producers would be willing to place their goods here they could without any great effort find a very satisfactory market in this colony, without any possibility of competition to interfere; but the prices and the quality of the goods should be satisfactory."

To Handle Cottonseed Oil.

Comas Hijo, Reconquista 375, Buenos Aires, writes to the MANUFACTURERS RECORD as follows:

"I acknowledge receipt of your letter of August 24, enclosing list of houses handling cottonseed, and to these I have written, not forgetting to mention your journal. I would like very much to become the agent for a strong firm engaged in the exportation of cottonseed oil, but I would expect my client to accept a letter of exchange at 90 days' sight after the receipt of the merchandise at custom-house. The condition above referred to and the terms of 90 days are in harmony with those made by the important firms: Edible Products Co., American Trading Co., Williams-Pecky Company, William H. Knox & Co., etc., so you will readily understand the reason I make the request in regard to terms of sale. I shall appreciate whatever you can or will do for me, and if necessary I will be able to give you the very best of European national bank and commercial references."

For Cotton Products.

Micheli & Co., Calle Uruguay 463, Buenos Aires, Argentina, write to the MANUFACTURERS RECORD as follows:

"Being interested in handling certain American products, chiefly in the way of cotton goods and cotton yarns, we beg to address you in order to ask you kindly to put us in connection with manufacturers interested in developing their trade with the Argentine. We are acting as agents, and it would be advisable to inform your friends that to start business in Argentine it is necessary to grant credits at six months from date of invoice, as is generally done by the European manufacturers who do business here. We would also be pleased to know the cost of an advertisement in your review."

Brass and Copper Lamp Parts.

Holl M. Voor Agentuurzaken (Holland Cy of Home and Foreign Agencies), Amsterdam, Holland, writes to the MANUFACTURERS RECORD as follows:

"We should very much appreciate to receive the two latest numbers of your weekly newspaper, one for our purpose and one for our club. As manufacturing agents for the Continent we have regularly inquiries of American goods, and are now interested in high-class ornamental stamped (massive) brass and copper for the

manufacture of gas and electric lamps and furniture mounting (in competing with Germany)."

For Chair Manufacturers.

P. C. Jones & Co., Sydney, Australia, write to the MANUFACTURERS RECORD as follows:

"We are in receipt of your MANUFACTURERS RECORD. We have written to the Steel Protected Concrete Co., Philadelphia, in connection with their curb protector. We mentioned to them that we came in touch with their name through the MANUFACTURERS RECORD. We are desirous of representing as agents an American chair manufacturer, a fairly cheap line. There are large orders here for the right goods, and we feel confident that we could place the business."

Steel Netting and Wire.

G. Rosenmann, 194-200 Bishopgate, London, E. C., England, writes to the MANUFACTURERS RECORD as follows:

"I would be pleased if you would give me the names of a few good export manufacturers of steel wire, plain and galvanized, and galvanized wire netting, for which there is a demand. Of course, your manufacturers' prices must be competitive, and they must quote c. i. f. English port, cash against documents."

Machine and Other Tools

F. M. Frye & Co., 46 Upper Thames street, London, E. C., England, write to the MANUFACTURERS RECORD as follows:

"We are principally interested in small and machine tools, and shall be pleased if you will kindly put us in communication with respective manufacturers of these lines."

Australia Wants American Machinery.

Benson Bros., Ltd., engineers and machinery merchants, 5-53 Druitt street, Sydney, Australia, write to the MANUFACTURERS RECORD as follows:

"Just at present trade in this country is considerably

upset by drought and war. We already represent a large number of American manufacturers, but we are thinking of extending our business in the direction of handling machinery for working leather, rubber, paper and cement, etc."

Cotton Goods, Hosiery and Boots.

M. E. Hazzan & Fils, Boite Postale 849, Alexandria, Egypt, write to the MANUFACTURERS RECORD as follows:

"We have received a copy of your newspaper issued in November. We are seeking principally manufacturers of cotton goods, hosiery and boots, and shall thank you if you can put us in touch with any firm in your city. There is presently a lot of business to do in Egypt, and it would be availing of the opportunity to do some work here."

Wants Ice Machinery.

R. T. Graham, Bel-Air, Richmond Gap, St. Michael, Barbados, B. W. I., writes to the MANUFACTURERS RECORD as follows:

"Will you kindly hand this letter to a manufacturer of ice machines? I desire a machine of about 25 pounds ice capacity; would be glad to have prices and description. I have electric power."

To Build Two New Steamships.

W. H. Pleasants, vice-president and general manager of the Ocean Steamship Co., is quoted in a report from Savannah as saying that work will begin soon upon the construction of two new ships for its line. They will be larger vessels than any now employed by the company, and will be suitable for either coastwise or transatlantic service. Chas. H. Markham is president of the line. He is also president of the Illinois Central Railroad and chairman of the Central of Georgia Railway.

The barge service of the Southern Transportation Co., which is to avail itself as far as possible of the inland waterways on the Atlantic coast, will bring coal to Charleston, S. C., and carry north phosphate rock and lumber.

CUMMER ASPHALT PAVING PLANTS.

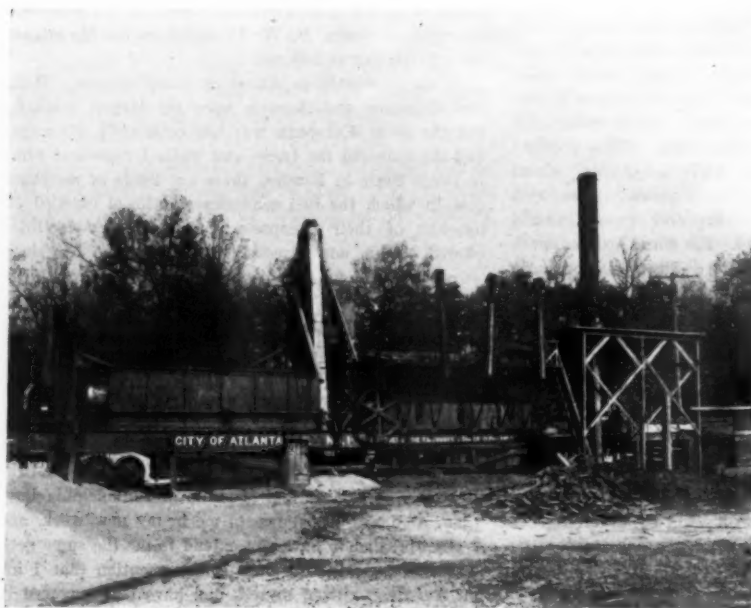
Through the co-operation of the construction departments of the city of Atlanta and the county of Fulton, Georgia, many important streets in Atlanta have been paved during the past several months. Much of this work was carried out with the aid of a Cumber one car portable asphalt plant, as shown in the accompanying illustration, which was purchased by the city of

Atlanta from the F. D. Cumber & Son Company of Cleveland, O.

On Cherokee avenue 14 blocks were paved with a six-inch binder of stone and a two-inch surface of sheet asphalt, requiring approximately 29,000 yards of asphalt. While paving two blocks on Whitehall street with an average stone binder of four inches to receive the

asphalt and a two-inch asphalt surface, it is said the Cumber plant averaged 1000 square yards of asphalt turned out per day. The highway authorities report that the Cumber asphalt road plant has been economical in operation as well as satisfactory in other respects.

Recent contracts for Cumber asphalt road plants received by the F. D. Cumber & Son Company include one from the Borough of the Bronx, New York city, for a Cumber road plant with a guaranteed capacity for turning out 750 square yards of two-inch top asphalt macadam or Topeka Mix per day. This plant is to be erected and ready for operation in the early spring.



MUNICIPALLY OWNED ASPHALT PLANT.

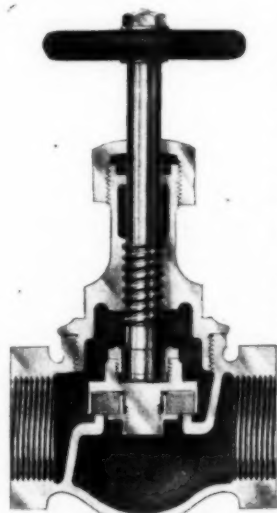
MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Jenkins Bros.' Renewable Disc Valves.

For years Jenkins Bros., 80 White street, New York, who claim to be the originators of the renewable disc valve, have manufactured high-grade valves for steam, water, air and gas service, and by reason of the necessary practical knowledge gained in the manufacture of renewable disc valves the firm has been enabled to develop a new composition disc for steam service in its modern rubber factory at Elizabeth, N. J., which will hereafter be used in all Jenkins Bros.' steam patent globe, angle and radiator valves. The composition of the disc is very hard, but is said to become tough and flexible in service when under steam pressure, and shows remarkable freedom from cracking and flaking under working steam pressures up to 150 pounds. During the past year the disc has been undergoing severe tests in hundreds of plants, and it is claimed that engineers now using composition discs in their installations pronounce them most satisfactory for steam service. Instead of employing a solid metal clapper, the standard pattern brass valves are fitted with Jenkins composition discs, contained in a brass disc holder, and this disc, when the valve is closed, rests upon a raised brass seat in the body of the valve, as shown in the larger illustration. Being somewhat resilient, the composition disc presents a slightly yielding surface to the valve seat, and adapts itself to any roughness of the seat. In case of foreign matter lodging in the seat, it usually imbeds itself in the composition disc without injury to the metal seat. If the disc should become worn through hard service, a new disc can be substituted easily and cheaply.

While the composition disc was the principal feature of the original Jenkins Bros.' valve, from time to time improvements have been made. A disc removing nut and nut lock has been designed to facilitate the removal of the composition disc from the disc holder. The keyed stuffing box is a hexagonal recess cast in the top of the valve bonnet, into which the packing is compressed by the waste nut. This keeps the packing and nut free turning when the valve is opened or closed. It also holds the packing when the waste nut is unscrewed, so that it can be easily taken out to repack even when the valve is under full pressure and wide open.



Sectional View of Jenkins Bros. Brass Globe Valve.

All Jenkins Bros.' brass globe, angle and cross-valves, standard pattern, are designed and guaranteed for a working pressure of 150 pounds, and are adapted for use in steam, hot or cold water, oil, chemicals, air or gas service. The metal used in the construction of the valves is of the highest grade, and all working parts, which are made of heavy design, are standardized and interchangeable. A complete service department, organized to assist prospective purchasers in selecting valves best suited to particular installations, is maintained by the company.

The Smith Endless-Bed Sander.

Since the triple-drum sander, with patent endless-bed feed for handling short, long, narrow and wide stock, was first constructed by the H. B. Smith Machine Co. of Smithville, N. J., about 15 years ago, many improvements have been incorporated in its design, the latest of which is the silent chain drive.

While the principles of the machine have remained

unchanged, each year has added improvements in construction and in details. For instance, the feed-bed is composed of steel-drawn lags, mounted on two substantial chains made of links, pins and blocks in such a manner that the pins do not move in the links, while long bearings in the blocks through which the pins oscillate are made self-lubricating so as to require attention only about once a month. And the feed-bed, as a whole, moves over replaceable ways which are provided with mechanical lubrication, producing easy running qualities combined with durability. The feed-bed is faced with rubber pads so as to make a yielding surface which enables the operator to keep the entire bed full of work even if the pieces are short and narrow and of slightly different thicknesses. A patent rotary brush for keeping the rubber pads clean increases their tractive force and insures a positive feed. In helping to keep the working parts always clean, a second rotary brush assists the action of the polishing drums in lifting the dust into the exhaust pipes overhead.

The patent polishing drums are provided with an automatic take-up, which keeps the paper on the drums taut, thereby increasing the length of wear of the paper and requiring no attention until worn out and ready to come off. New paper is easily replaced on the drums by the removal of the new quadruple hoods. Every necessary adjustment for doing all classes of work is provided.

Belt drive was formerly used on the drums, but the new chain drive limits the belt to the first drum only, while the silent chains drive the second and third drums. By electrical motor tests the company found that quite a saving in power was obtained in the use of the chain drive.

The feed-bed as a whole has adjustment for leveling to the platens, and adjusts vertically for thickness of work by power. Positive chain drive feed controlled by a lever and a two-speed clutch is applied to the machine. A safety guard covers the feed chain, and the expansion gearing to the feed-bed and gearing are covered by a patent gear case.

Special circulars relating to the Smith patent endless-bed sanders will be sent to interested persons upon application to the H. B. Smith Machine Co.

A Large Stitched Cotton Duck Belt.

A single roll of stitched cotton duck belting recently made by the Gandy Belting Co. of Baltimore for an Iowa supply house is 712 feet long, 36 inches wide, and weighs 6000 pounds. Unrolled to its full length, it would extend for more than an eighth of a mile, or more than three city blocks of average size. The accompanying illustration gives some idea of what these

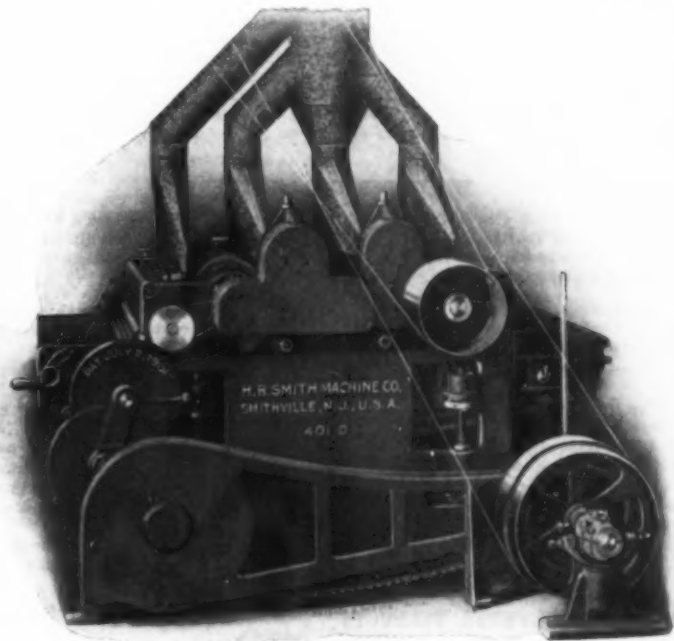


GANDY STITCHED COTTON-DUCK BELTING.

figures mean and an indication of the facilities of the factory able to furnish a belt of these dimensions at short notice.

The belt is made of special weave of heavy weight cotton duck stitched, while it is under tension from end to end, with a heavy sewing cord on patented machines, making an imbedded stitch, which leaves the surface of the belt perfectly smooth. By an original device all parting or splitting of ends is obviated and trouble from air puffs is done away with. A special oil process to which each belt is subjected renders it water, oil, steam heat and dirt proof, and keeps it pliable, adding greatly to the life of the belt. Special widths of belt are woven for each size, thereby ensuring a selvage and consequent even strain on both edges of every belt.

While this belt was under construction the Gandy Belting Co. was completing its thirty-sixth year in the manufacture of stitched cotton duck belting, of which



PATENT ENDLESS-BED SANDER.

Maurice Gandy was the inventor. The company claims to operate the largest factory in the world devoted exclusively to the manufacture of belting of this type and to control the basic patents connected with the industry.

Cottonseed Flour for Belgians.

Jo W. Allison of Dallas, Tex., has received from 75 cottonseed-oil mills of Texas \$750 toward a fund to be used in the purchase of cottonseed flour to be contributed in the name of the cottonseed-oil trade of Texas to the Belgian sufferers. Other mills, numbering more than 200 in the State, are being urged to join the movement. The Schulenburg Cotton Oil Co. of Schulenburg, Tex., which has just installed, at a cost of about \$20,000, machinery for the manufacture of cottonseed flour, will furnish the flour at a reduced price, and the bags will be furnished free by C. E. Shepp of the Texas Bag & Fiber Co.

Pigs as Prizes.

Sixteen prizes in the shape of pure-bred pigs or short-term scholarships in the State College of Agriculture at Athens, Ga., have been awarded to boys in as many counties of Georgia and Florida in the boys' corn club contests under the auspices of the Georgia Southern & Florida Railway. The highest yield of corn per acre in the contest was that of Lewis Register of Hahira, Lowndes county, Georgia, 125.80 bushels, and the lowest was that of Harry Williams of Taylor, Baker county, Florida, 44 bushels.

C. W. Hahl, in a letter to the Daily Post of Houston, Tex., makes a plea for an increase in freight rates by the Texas railroads. His argument is condensed in the following sentence: "Cripple the railroads and you cripple business generally, as well as stop progress and development."

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ga., Folkton.—Charlton County Commrs. let contract E. F. Dean, Toledo, Ga., at \$3599 to construct bridge over St. Mary's River between Charlton county, Georgia, and Nassau county, Florida.

Kentucky.—Mobile & Ohio R. Co., R. V. Taylor, V.-P. and Gen. Mgr., Mobile, Ala., is reported as planning purchase 37½ acres land on Kentucky shore and 37½ acres on Illinois shore, near Cairo, preparatory to constructing bridge across Ohio River; bridge reported to cost about \$2,500,000; has not decided upon definite plans for this bridge. (Noted in July, 1914, as proposing to build Ohio River bridge.)

Okl., El Reno.—Canadian County Commrs. let contract to Oregonia Bridge Co. of Lebanon, O., and Oklahoma City to construct 4 additional steel bridges. (Lately noted as receiving contracts for 16 bridges, same county.)

Tenn., Clinton.—Anderson county will erect lately-noted 3 steel bridges across Clinch River; 400 to 600-ft. structures; cost about \$20,000; date of opening bids not set; E. C. Cross, Clinton, interested. (These bridges lately noted to be located 2 at Clinton, 1 at Edgemore.)

Tenn., Fayetteville.—Tennessee & Alabama R. R. Co., J. E. Hurd, Ch. Engr., Oblong, Ill., will erect 100-ft.-span bridge in connection with 34-mi. railroad to be built between Fayetteville, Tenn., and Huntsville, Ala.

Tex., Harrisburg.—Harris County Commrs., Houston, will construct steel bridge over Brays Bayou; W. V. Burnell, County Engr., will prepare plans and specifications; estimated cost, \$15,000.

Tex., Palo Pinto.—Palo Pinto county will construct bridges and culverts on roads in Road Dist. No. 1; Commrs.' Court receives bids until Feb. 8; Jas. C. Travilla, Engr., Mineral Wells; J. W. Brock, County Clerk. (See Machinery Wanted.)

Va., Ellerson.—Hanover and Henrico counties will build bridge to replace present structure over Chickahominy River near Ellerson; bids at office State Highway Com., G. P. Coleman, Commr., until Jan. 23; reinforced concrete superstructure; piles and

plain concrete substructure. (See Machinery Wanted.)

Va., Richmond.—Administrative Board authorized T. Crawford Redd to make preliminary survey and drawings for reinforced steel and concrete viaduct across Shoccoe Creek Valley between Richmond and Barton Heights; Chas. E. Bolling, City Engr.

CANNING AND PACKING PLANTS

Fla., Jacksonville.—Henry Knight & Sons, Louisville, Ky., are reported to establish packing plant and abattoir.

Fla., Sanibel.—Tarpon Bay Packing Co., capital stock \$5000, inctpd.; C. E. Bearce, Prest., Punta Gorda; Elmer Petrow, V.-P., and John A. Bruaw, Secy.-Treas., both of Sanibel.

Ga., Macon.—Neuhoff Abattoir Co., Nashville, Tenn., will build packing and cold-storage plant reported to cost \$75,000.

Mo., St. Joseph.—Swift & Co. (main office, Chicago) reported as contemplating erection to boiler-house; reinforced concrete; install six 500 H. P. boilers with space for two more; estimated cost, \$100,000.

S. C., Rockville, P. O. at Charleston.—Sea Island Canning Co., capital \$15,000, inctpd.; E. Henry Palmer, Prest.-Treas.; Jas. S. Townsend, V.-P. and Gen. Mgr.

Va., Waverly.—Dr. W. B. Graves of East Orange, N. J., is reported as contemplating establishment of co-operative bacon factory.

CLAYWORKING PLANTS

Md., Barrellville.—Bricks.—Hamilton Brick & Tile Co. organized by Paul L. Hitchins of Frostburg and Jos. P. Blake and W. L. Hamilton of Mt. Savage, Md., to manufacture building and paving brick, etc.; daily capacity, 50,000 bricks.

Mo., Kansas City.—Terra-Cotta.—National Ornamental Terra-Cotta Co., capital \$250,000, inctpd. by Harry Stiver, Chas. W. Lovitt and J. L. Davies.

N. C., Plymouth.—Bricks.—Plymouth Brick Co., capital stock \$1000, inctpd. by D. S. Jones of Plymouth, L. C. Blades and C. J. Ward of Elizabeth City and others.

S. C., Hamburg, R. F. D. North Augusta—

Brick and Tile.—Rutherford & Co., J. A. Johnston, Prest., will operate old Rutherford brick yards; machinery supplied; daily capacity 60,000 building bricks. (Lately noted inctpd. with \$50,000 capital.)

COAL MINES AND COKE OVENS

Ala., Mobile.—Mexican Gulf Coal Co., capital stock \$4000, inctpd. by Noah Schwarz and Chas. B. Todd of Mobile, and John R. Vidmer of Pensacola, Fla.

Ky., Coalmont.—Watts Creek Coal Co., capital \$10,000, inctpd. by W. L. Moore, F. M. Stanaford, S. S. Lawson and E. L. Stephens.

Ky., Viper.—Viper Coal Co., C. J. Heatwole, Secy. (lately noted inctpd., capital \$6000), has not yet fully organized; officers not elected; develop 340 acres; has made one entry.

Okl., McAlester.—Capitol Coal Co., capital \$12,000, inctpd. to develop coal mines; C. H. Fleet, Prest.; M. K. Weigel, V.-P.; R. S. Nelson, Secy.-Treas.; W. S. Nelson, Gen. Mgr.

Okl., Miami.—McConnell-Barnes Mining Co., capital stock \$4000, inctpd. by C. J. McConnell of Miami, T. F. Lennan of Joplin, Mo., and J. W. Barnes of Baxter Springs, Kans.

Tex., Temple.—Bastrop Lignite Coal Co., capital stock \$75,000, inctpd. by F. L. Denison, J. H. Davis and A. J. Jarrell.

W. Va., Davis.—Davis Coal & Coke Co. is reported as to sink additional shafts and increase annual output from 2,000,000 to 3,000,000 tons coal.

W. Va., Logan.—Lorain Coal & Dock Co., D. P. Cary, Prest., Columbus, O., purchased 14,000 acres Logan county coal land, as lately reported; arranging to develop; Engr., Geo. W. Wyss, Columbus; J. W. Johnson, Gen. Mgr., Columbus, will locate at Huntington, W. Va., where offices will be located, to manage development; details not determined.

W. Va., Matewan.—Allburn Coal & Coke Co. of Matewan acquired mining lease for \$60,000; will improve and further develop.

W. Va., Mingo County.—Mingo Block Coal Corp., Columbus, O., has organized; E. T. Hitchman, Prest., Wheeling, W. Va.; J. C. Simpson, Secy., Moundsville, W. Va.; Geo. S. Sarver, Treas., Greensburg, Pa.; contemplates construction of 2 plants with daily capacity of 1500 to 2000 tons each; develop 8000 acres coal land in Mingo county. (Lately noted, under Parkersburg, chartered with \$2,000,000 capital stock.)

W. Va., Mullens.—Miller-Pocahontas Coal Co., capital stock \$100,000, inctpd.; leased 1100 acres coal land near Mullens and will develop; Jas. H. Miller, Prest., Mullens; Dr. O. O. Cooper, V.-P.; L. N. Frantz, Secy.-Treas.

CONCRETE AND CEMENT PLANTS

N. C., Wilmington.—Cement Products.—Cement Products Co., authorized capital \$15,000, inctpd. by Geo. W. Kidder, John F. Harris and H. W. Rapalje.

Okl., Tulsa.—Cement Posts.—Staple Post Mold Co., H. L. Pettit, Prest., Westerville, O., is reported to build plant to have capacity of 2000 cement posts per week.

COTTON COMPRESSES AND GINS

Ala., Mobile.—Turner Terminal Co., Horace Turner, Prest., will build cotton compress. (See Miscellaneous Construction.)

COTTONSEED-OIL MILLS

Ark., Augusta.—Home Oil & Mfg. Co., capital stock \$50,000, inctpd. by Nathan Gregory and others.

DRAINAGE SYSTEMS

Ark., Wynne.—Crittenden County Drainage Dist. No. 2, W. H. Newsom, Engr., let contract R. H. & G. A. McWilliams, 1000 Steger Bldg., 28 E. Jackson Blvd., Chicago, Ill. (branch office, 730 Exchange Bldg., Memphis, Tenn.), to excavate 5,116,754 cu. yds. open drainage ditches; contract price, \$448,227.65; work to be completed within 2 years; contractors state will probably install 6 floating dredges. (Bids lately noted.)

Fla., Parish.—Drainage Committee engaged Chas. S. Hill, Engr., Palmetto, Fla., to make survey preparatory to construction of Gamble Creek drain; reclaim about 30,000 acres

farming lands; estimated cost \$100,000. (Lately noted.)

Ky., McLean County.—McLean and Muhlenberg counties contemplate constructing system to drain 21,000 acres land; D. F. Culbertson, Asst. Drainage Engr., United States Dept. of Agriculture, will make preliminary survey; estimated cost, \$175,000; F. F. Shafer, Government Drainage Engr., Louisville.

Ky., Union County.—Union and Henderson counties contemplate constructing system to drain 13,000 acres in Highland Creek Dist.; Union County Judge, Morganfield, Ky., is considering approval of \$137,000 bond issue to cover cost; F. F. Shafer, Government Drainage Engr., Louisville.

La., Oberlin.—Oberlin Drainage Dist. No. 3, S. J. Iles, Prest., will drain marsh north and east of Oberlin and swamp to south; planned to construct canal into Bayou Blue and dredge channel of bayou for few mi. to south.

Miss., Corinth.—Alcorn County Drainage Commrs. will let contract to remove 100,000 cu. yds. earth and clear 63 acres right of way in Chambers Creek Drainage Dist.; bids opened Jan. 13; Ely B. Mitchell, attorney.

Mo., Elsberry.—Elsberry Drainage Dist. will construct about 100,000 cu. yds. earthwork; Mississippi River Com., Clarke S. Smith, Major, Engrs., 1311 International Life Bldg., St. Louis, receives bids until Feb. 8; Dist. lately noted to have let contract Arrow Engineering Co. of St. Louis for pumping plant and sluiceway. (See Machinery Wanted.)

ELECTRIC PLANTS

Ala., Lincoln.—Alabama Power Co., Birmingham, will arrange to provide electric lighting. (See Ala., Pell City.)

Ala., Pell City.—Alabama Power Co., Birmingham, will arrange to provide electric lighting to Pell City, Lincoln and other cities; already has transmission lines.

Ark., Blytheville.—Hollipeter & Jonts are remodeling lately-noted building, but making no changes in electric plant. (See Ice and Cold-storage Plants.)

Ark., Rison.—City will expend \$25,000 on lately-noted electric-light and water plants; A. C. Moore, Engr., Joplin, Mo.; prices or bids to be asked upon sale of bonds. (See Water-works.)

Fla., Bonifay.—Bonifay Light & Water Co., A. L. Byrd, Engr., will expend \$8000 on proposed construction; erect 40x60-ft. brick power-house, cost about \$1400; let contract W. C. Amos, Bonifay; develop 60 to 70 H. P.

Fla., Fellsme.—Robt. Kaun will establish lately-noted small electric plant on farm; about 40 lights; power from artesian well.

Ga., Atlanta.—Georgia School of Technology let contract to Pittman Construction Co., Rhodes Bldg., Atlanta, to construct electric plant building; contractor states plans are not entirely completed; cost \$75,000; 42x100-ft. 2-story structure; concrete foundation, steel frame, brick walls, metal windows and tile roof; boiler-room wing 54x115 ft., with 33-ft. clear-story, steel construction, slate roof, brick walls, fireproof doors and windows, terra-cotta trimmings; Francis P. Smith, Archt.; 1-story 45x100-ft. reinforced concrete coal-storage building will also be built; install \$100,000 machinery equipment donated by Northern manufacturers. (Lately noted.)

Ga., Quitman.—City let contract to construct electric-light plant and water-works; voted \$40,000 bonds. Address The Mayor.

Ga., Wadley.—City's electric-light plant, contract lately noted let to Singleton-Smith Co. of Macon, Ga., will include Muncie electric engine of 30 H. P., battery to supply 200 20-watt lamps for 8 hours, etc.; \$6400 bonds voted. (Lately noted.)

Ky., Adairville.—City is reported as considering installation of electric-light plant to replace burned acetylene-gas plant. Address The Mayor.

Ky., Somerset.—Kentucky Utilities Co. considering plans to construct extension of electric distributing system between Somerset and Burnside, 7 mi.

Md., Mt. Airy.—Robt. L. Runkles and C. C. Riddlemoser will install electric plant in connection with their ice plant; furnish electric lighting to Mt. Airy and Ridgeville.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Okla., Yale.—City voted \$32,000 bonds to build electric-light plant and extend water-works; E. A. Pierson, Clerk.

S. C., Conway.—Quattlebaum Light & Ice Co., capital \$30,000, incptd. by Paul Quattlebaum, McQueen Quattlebaum and C. P. Quattlebaum.

Va., Dayton.—City votes Feb. 16 on \$24,500 bonds to construct electric-light and power plant and sewerage system. Address The Mayor. (Call for election lately noted to be held Jan. 19 has been revoked.)

Va., Hampton.—City plans extending electric-lighting system. Address The Mayor.

FERTILIZER FACTORIES

Md., Perryville.—Eureka Fertilizer Co. incptd. by H. G. Rush, W. B. Rush, A. B. Hess and John W. Eshelman.

N. C., Washington.—Phillips Fertilizer Co., capital stock \$100,000, incptd. by C. A. Phillips, F. T. Phillips and Amy S. Wright.

FLOUR, FEED AND MEAL MILLS

Ga., Bartow.—LeRoy Smith is reported as contemplating erection of milling plant to be driven by present electric plant.

Ga., Blythe.—Farmers' Gin & Fertilizer Co. will increase capital stock from \$6000 to \$10,000; build 40-bbl. flour mill and corn mill of capacity to handle 25 bus. per hour.

Ky., Flemingsburg.—Flemingsburg Mills, capital \$15,000, incptd. by J. R. Kelly, C. E. Rhodes, C. L. Hinton and A. T. Day.

Okla., Billings.—Pearson & Hayton placed order for 25-bbl. mill and other equipment for flour mill lately noted to be constructed; erection by the firm.

Okla., Shattuck.—John M. Degrange, Gage, Okla., purchased and will install 25-bbl. flour mill, 25-H. P. oil engine, cleaning and transmitting machinery.

Okla., Helena.—Geo. Kasky installs 25-bbl. mill; contemplates operation by Feb. 1; machinery purchased.

S. C., Florence.—A. L. Baskin will build lately-noted mill; erect 25x40-ft. 2-story-and-basement ordinary construction building; machinery cost about \$1200; daily capacity about 500 bus. meal and grits.

Tex., Katy.—Progressive Milling & Mfg. Co., capital stock \$5000, incptd. by R. Robertson, H. E. Romack and D. S. McCannon.

FOUNDRY AND MACHINE PLANTS

Ala., Bessemer.—Iron Pipe.—United States Cast Iron Pipe & Foundry Co., general office, Burlington, N. J., L. R. Lemoine, Prest., 1421 Chestnut St., Philadelphia, Pa., is reported as planning betterments to about double capacity; not ready to announce details of proposed remodeling.

Ala., Birmingham.—Railroad Frogs, etc.—Southern Wheel Co., Wm. Cutler, V.-P., St. Louis, Mo., is reported to build addition to plant and equip to manufacture railroad frogs and switches and for general forging and casting plant.

Ga., Athens.—Foundry, etc.—Bailey Tool Co., Thomas and Clayton Sts., will establish small foundry and machine shop and repair shop. (See Machinery Wanted.)

Ga., Savannah.—Iron Works.—Kehoe Iron Works, Wm. Kehoe, Prest., has begun construction of plant on East River St. for marine construction and repairing; plant will include machine shops, boiler works, pattern shops and office; brick, reinforced concrete and steel; reinforced concrete piers for foundations; steel work costing \$30,000 being built by International Steel Co. through local representative, Mallonee Engineering Co. (Previously noted.)

La., South Mansfield.—Iron Works.—Barber Iron Works, capital stock \$5000, incptd.; J. C. Barber, Prest.; A. J. Herbert, Secy.

Md., Baltimore.—Foundry.—Baltimore Gas Appliance & Mfg. Co., Bayard and Hamburg Sts., let contract to Benj. F. Bennett Building Co., 123 S. Howard St., Baltimore, to erect warehouse and office and plant addition; 215x135 ft.; brick; slag roof; steam heat; electric light; plans by Engineering Dept. Consolidated Gas, Electric Light & Power Co., Lexington and Liberty Sts. (Lately noted under Miscellaneous Factories. See Machinery Wanted.)

Okla., Lawton.—Machinery.—Stephens' Machine & Foundry Co., capital stock \$10,000, incptd. by J. R. Yarborough, Fred Cowell and B. R. Stephens.

W. Va., Dunbar.—Electric Motors.—Pavey Electric Co., capital stock \$100,000, incptd. by Frank Pavey and Saml. Pavey of Indianapolis, Ind.; W. T. Moore and Paul Grosscup of Dunbar, W. Va. (Lately reported as to erect

2-story 200x175-ft. factory building of brick and equip for manufacturing electric motors.)

GAS AND OIL ENTERPRISES

Fla., West Palm Beach.—Gas Plant.—City granted franchise Thos. S. Kennedy franchise to construct gas plant. (Lately noted.)

La., Lake Charles.—Gas.—Commission Council invites bids for gas franchise; plant to have minimum daily capacity of 100,000 cu. ft. gas and include 12 mi. mains; G. M. Ritting, Mayor. (See Machinery Wanted.)

La., Shreveport.—Operators' Oil Co., capital stock \$30,000, incptd.; Dr. J. L. Kimball, Prest., Shreveport; Oscar Shanks, V.-P., Alexandria, La.; C. J. Mason, Secy., and W. S. Atkins, Treas., both of Shreveport.

Md., Baltimore.—Oil Refinery.—Prudential Oil Corp., 17 Battery Place, New York, let contract Andrew Miller Co., Dundalk, Md., to construct timber-concrete bulkhead wharf 800x400 ft.; same contractor building 96x28-ft. frame warehouse and office for Prudential company. (Previously noted incptd. with \$5,000,000 capital stock to build oil refinery, letting contract to dredge 700 ft. water-front, etc.; plant location is Wagner's Point, on Patapsco River near Baltimore.)

Okla., Ada.—MacThwaite Oil & Gas Co. will lay pipe line system to supply natural gas to Ada; 13,400 ft. pipe delivered.

Okla., Blackwell.—Spencer Oil Co., capital \$2000, incptd. by J. L. Waite, H. L. Spencer and Wm. M. Vickey.

Okla., Broken Arrow.—Dalsa Oil & Gas Co., capital stock \$10,000, incptd. by Garden Green of Broken Arrow, W. J. Garden of Nowata, Okla., and Geo. W. F. Green of Dallas, Tex.

Okla., Indianola.—Oil Refinery.—Indianola Refining Co., authorized capital \$600,000, incorporated by Walter Weener, A. F. Schock and W. M. Schock.

Geo. Miller, Prest., York and William Sts., decided to install producer-gas equipment in previously-noted plant; has let contracts for three 300 H. P. anthracite gas producers made by Smith Gas Power Co., Lexington, O., and two 325 H. P. vertical gas engines manufactured by Rathbun-Jones Engineering Co., Toledo, O.; let contract Vilter Mfg. Co., Milwaukee, Wis., for two 100-ton duplex ammonia compressors; other minor machinery to be ordered later; contemplates operation by April 1.

Md., Hagerstown.—Mutual Ice Co., capital stock \$2500, incptd. by Eustace K. Semple, Louis Saltzman and David R. Shannon.

Mo., Joplin.—Siloam Springs Ice & Water Co., Siloam Springs, Ark., proposes establishment of ice plant.

Mo., Pattonsburg.—Pattonsburg Electric Light Co., O. L. Wright, Prest., will install 10-ton ice machine; cost \$4500; building erected. (Lately noted to install ice factory for operation in connection with electric-light plant.)

N. C., Hickory.—J. A. Mauney and R. M. Roseman, Jr., of Lincolnton, N. C., will build 12-ton ice plant.

S. C., Conway.—Quattlebaum Light & Ice Co. incptd. by Paul Quattlebaum and others. (See Electric Plants.)

S. C., Spartanburg.—Hallett Ice & Coal Co. organized with W. B. Hallett, Prest.; A. Sherrod, V.-P.; C. C. Walker, Mgr., and W. A. Sherrod, Secy.-Treas.; let contract Willard-Boggs & Co. of Spartanburg to erect building for ice plant, first of several buildings proposed; 2 stories; main structure 31x54 ft. and boiler-house 14x54 ft.; main of brick, with reinforced concrete second floor and granite composition specification; cost, exclusive of equipment, \$5000; daily capacity 95 tons; also contemplates building ice-cream factory. (Lately noted incptd. with \$32,000 capital stock.)

PROPOSAL ADVERTISEMENTS IN THIS ISSUE

PUBLISHED ON PAGES 68

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Okla., Oklahoma City.—New England Oil & Gas Co., capital stock \$25,000, incptd. by C. E. Johnson, Ed J. Fahy and John J. Moran.

Okla., Tulsa.—Gasoline.—Sun Gasoline Co., capital stock \$100,000, incptd. by Thos. Chestnut, T. K. Smith and C. P. Zulinan.

Okla., Tulsa.—Tulsa Alert Oil Co., capital \$25,000, incptd. by J. J. O'Brien, Tulsa; Max Allen, Chicago, Ill.; Fred Haynes, Philadelphia, Pa.

Tex., Jasper County.—P. K. Fulton (care Houston Bulletin, Houston, Tex.) contemplates oil development in Jasper county after timber is cut. (See Lumber Manufacturing and Machinery Wanted.)

Tex., Pecos.—Texas Petroleum Co., capital stock \$50,000, incptd. by C. R. Trexel, J. F. Ross and W. W. Hubbars.

Tex., Temple.—Gas Plant.—Bell County Commrs., Belton, Tex., granted franchise Temple Gas Light Co. (main office, Detroit, Mich.) to lay gas mains on all public roads of county.

W. Va., Charleston.—Eureka Pipe Line Co. is reported to construct trunk pipe line into new Cabin Creek oil field.

W. Va., Huntington.—Kent Oil & Gas Co., Robson-Prichard Bldg., incptd. with \$25,000 capital stock by J. F. Kent and W. O. Wiatt of Huntington, H. S. Gay of Logan and others.

W. Va., Parkersburg.—Big Flint Oil & Gas Co., capital \$25,000, incptd. by Conrad Goetz, W. O. Foley, G. C. Enoch and others.

ICE AND COLD-STORAGE PLANTS

Ark., Blytheville.—Hollipeter & Jontz are remodeling lately-noted building; purchased additional ice machine; need no further equipment or material.

Ga., Macon.—Neuhoff Abattoir Co., Nashville, Tenn., will build cold-storage and packing plant reported to cost \$75,000.

Md., Baltimore.—Knickerbocker Ice Co.,

residence section; has constructed 1 mi. cement pavement; will build additional mi. about April; also lay sewer pipe. (See Sewer Construction.)

Miss., Houlika.—L. A. Fitzgerald, Jr., Helena, Ark., contemplates development of townsite at South Houlika; truck-gardening settlement.

Okla., Drumright.—City voted bonds to improve parks and construct sewer system. Address The Mayor.

W. Va., Huntington.—City Commrs. contemplates extending city park and building gravel walks throughout new section.

LUMBER MANUFACTURING

Ark., Arkansas City.—Thane Lumber Co., capital stock \$25,000, incptd.; H. Thane, Prest.; A. Kimball, V.-P.; E. O. Johnson, Secy.-Treas.

Ky., Shelby Gap.—Elkhorn Lumber Co., J. D. Bentley, has not completed plans for new mill; lately-noted purchase comprised 600 acres.

Miss., Logtown.—H. Weston Lumber Co., H. S. Weston, Prest., will rebuild plant, as previously stated; construction by company force; erect 42x210-ft. building; all material and machinery contracts closed; daily capacity 50,000 ft. yellow pine lumber.

S. C., Georgetown.—Atlantic Coast Lumber Corp. will hold meeting Feb. 11 to consider increasing capital stock from \$1,300,000 to \$2,400,000.

Tenn., Bridgeport.—Christian Kopp will establish sawmill; purchased equipment.

Tex., Jasper County.—P. K. Fulton (editor Houston Bulletin), Houston, Tex., contemplates development of 738 acres pine land in Jasper county, land afterward to be developed for oil; asks prices on sawmill machinery and lumber camp equipment, including electric-lighting system; also drilling machinery. (See Gas and Oil Enterprises and Machinery Wanted.)

Tex., Temple.—Temple Planing Mill, J. B. Coulisk, Propr., Box 383, will rebuild plant lately noted burned; install complete wood-working equipment. (See Machinery Wanted.)

Va., Norfolk.—Garrett-Hill Lumber Co., capital stock \$25,000, incptd.; W. W. White, Prest.; L. V. Ramsay, Secy.-Treas.

Va., Petersburg.—A. B. Cook, Propr. Wakefield Granite Quarries, will install small sawmill for plantation use; 50 to 100 H. P. upright boiler; 35 to 75 H. P. engine. (See Mining and Machinery Wanted.)

MINING

Ala., Birmingham.—Robinson Mining Co., capital stock \$8000, incptd.; H. H. Robinson, Secy.

Ala., Montgomery.—Gold.—Alex. Brazil and others contemplan development of gold-ore property; need machinery. (See Machinery Wanted.)

Mo., Carthage.—Marble and Stone.—Consolidated Marble & Stone Co. increased capital stock from \$50,000 to \$125,000.

Mo., Joplin.—Lead and Zinc.—Saginaw Mining & Leasing Co., capital \$2000, incptd. by Frank B. Weeks, Elmer Tabor and A. W. Thurman.

Tenn., Paris.—Limestone.—Business Men's Club, Louis Spencer Daniel, Secy., has option on limestone property 5 mi. from Paris; contemplates interesting parties to establish quarries (this preferred), or club may purchase machinery for development.

Va., Petersburg.—Granite.—A. B. Cook, proprietor Wakefield Granite Quarries, will reconstruct plant lately noted burned; erect building, probably of concrete, costing \$3000 or more; plans and construction by owner; install elevating, screening, washing and distributing machinery, and small sawmill; quarrying and stonecutting plant not injured by the fire. (See Machinery Wanted.)

Va., Petersburg.—Sand and Gravel.—Virginia Sand & Gravel Corp., capital \$500,000, chartered with Geo. W. Roper, Prest., Norfolk; W. W. Lanahan, V.-P., Baltimore; Wm. B. Roper, Secy., Norfolk; Henry L. Duer, Treas. and Asst. Secy., Baltimore; Marvin D. White, Asst. Treas., Norfolk; succeeds Norfolk Sand & Gravel Corp.; in addition to sand deposits of old company, owns square mile of gravel deposits on Appomattox River and will install plant to mine and wash gravel with capacity 500 cu. yds. per day, provision to be made to increase later; will increase fleet of barges, tugs and dredges.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile—Terminal Docks, etc.—Turner Terminal Co., capital stock \$200,000, incptd.; Horace Turner, Pres.; W. Marshall Higley, Secy.; acquires Turner-Hartwell dock property; in addition has adjacent harbor front and negotiating for additional land; will issue \$500,000 bonds for improvements and is authorized to issue \$1,000,000 additional bonds for purchases; will build warehouses, cotton compress, etc., to concentrate and handle cotton.

D. C., Washington—Wharves.—Dist. Comms., Daniel E. Garges, Chrmn. Wharf Comms., will build lately-noted wharves; remove 3 old structures and erect 3 new, on timber piles with reinforced concrete decks on Water St. between 11th and 12th Sts. S. W.; cost about \$50,000; bids opened Feb. 11; D. E. McComb, Engr. of Bridges. (See Machinery Wanted.)

La., New Orleans—Levees.—Government let contracts to construct 202,000 cu. yds. earth work in Lower Tensas Levee Dist. as follows: H. T. Van Fossen at \$13,382 for 101,000 cu. yds. in Bayou Vidal Levee, and to Robert Nicholson & Co. at \$17,635 for 101,000 cu. yds. in Dahila Levee.

Md., Baltimore—Tunnels.—Pennsylvania R. R. Co., A. C. Shand, Ch. Engr., Broad St. Station, Philadelphia, considering construction 2 additional tunnels under city, one on Wilmington-Philadelphia and other on Washington end; 1½ and 1 mi. long; proposition considered by city on January 19. (This is part of terminal facility improvements company plans as previously announced in connection with \$10,000,000 expenditure.)

Md., Baltimore—Wharf.—Prudential Oil Corp., 17 Battery Place, New York, let contract Andrew Miller Co., Dundalk, Md., to construct timber-concrete bulkhead wharf 800x400 ft. (See Gas and Oil Enterprises.)

Md., Baltimore—Breakwater.—Oscar F. Lackey, Harbor Engr., submitted municipal plans for construction of breakwater to protect boat and swimming basin at Fort McHenry Park; 5-ft. concrete walk with railing and steps; \$35,000 appropriated. (Lately noted.)

Mo., St. Louis—Mausoleum.—Valhalla Mausoleum Co., 718 Boatmen's Bank Bldg., will build mausoleum; 1 story; granite, concrete and hollow tile walls; concrete and ceramic floors; concrete and marble partitions; granite, bronze and copper art glass exterior finish; concrete foundations; estimated cost \$240,000.

Tex., Sabine Pass—Jetties.—Government let contract Jas. Clark & Co., Galveston, at \$174,083 for jetty work at Sabine Pass.

Tex., Port Arthur—Wharf.—Texas Co. (main office, Houston, Tex.) will construct 600 ft. additional wharf at its terminals; include erection of 2 additional concrete warehouse to store case oil.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham—Stock Yards.—Southern Stock Yards Co., 2701 2d Ave., A. G. Donahoo, Pres., succeeds J. A. Pate; has \$10,000 authorized capital, \$3000 paid in; equipped; contemplates future enlargement of barns. (Lately noted incptd.)

Ark., Blytheville—Laundry.—J. T. Hall and Spencer Semmes (owners of Blytheville Laundry) will install laundry equipment to replace burned plant. L. O'Hare will reconstruct building.

Fla., St. Petersburg—Incinerator.—City let contract Frank Estes to build incinerator to cost about \$5000.

Ga., Savannah—Engineering.—Modern Engineering Co., capital \$25,000, incptd. by C. H. Bell, C. A. Harper, W. M. Kildwell and others.

Ky., Ewing—Crusher.—Limestone Crusher Co., capital \$1000, incptd. by Jacob Stickrod, I. N. Ross and F. B. Moore.

La., New Orleans—Grain Elevator.—Louisiana Railway & Navigation Co., Wm. Edensborn, Pres., Hibernia Bank Bldg., contemplates building grain elevator to cost \$250,000 at Willow Landing.

Md., Baltimore—Shipbuilding Plant.—Skinner Shipbuilding & Drydock Co. bondholders have until Jan. 20 to decide on acceptance of plan for reorganization or withdraw bonds now deposited; as soon as plan is accepted and new capital in treasury will undertake improvements; latter not as yet being considered.

Md., Baltimore—Contracting.—Cogswell-Koether Co., 406 Park Ave., incptd. to conduct building construction; Corbin C. Cogswell, Pres.; Geo. H. Koether, V.-P. and Treas.

Mo., Kansas City—Grain Elevator.—Chi-

cago & Alton R. R., H. T. Douglas, Jr., Ch. Engr., Chicago, Ill., is reported to build grain elevator in East Bottoms; concrete; capacity, 500,000 bus.; cost \$150,000.

N. C., Charlotte—Dyeing and Cleaning.—Ben Vonde Co. Bldg., 18 W. 5th St., will be 100x100 ft.; lower floor, storerooms; upper, mill construction; contract let Good Construction Co., Charlotte; Ben Vonde Co. has bids on dyeing and cleaning machinery; this structure lately noted to be rebuilt, Ben Vonde Co., occupant, and Dr. E. Reid Russell, Asheville, N. C., owner of burned building. (See Machinery Wanted.)

Okla., Purcell—Grain Elevator.—Gibbons Elevator Co., capital stock \$5000, incptd. by Amelia J. Gibbons, Jas. E. Gibbons and M. F. Gibbons.

Okla., Tulsa—Decorating.—Plymouth Decorating Co., 311 S. Boston Ave., capital \$25,000, incptd.; Gus E. Koecker, Pres.; Herbert C. Campbell, V.-P.; Robt. J. Campbell, Secy.-Treas.; succeeds Plymouth Decorating Co.

S. C., Anderson—Grain Elevator.—Edward H. Richards of Willow City, N. D., is reported to build grain elevator to cost \$6000 to \$10,000.

Tex., Austin—Navigation.—Lake Austin Transportation Co., capital stock \$15,000, incorporated by L. W. Wright, E. H. Hill and E. R. Huck; will operate passenger and freight vessels on lake formed by City Water-Power Co.'s dam across Colorado River.

Tex., Bonham—Garbage Crematory.—City will build garbage crematory. W. A. Spangler, Mayor, receives bids until Jan. 29. (See Machinery Wanted.)

Tex., Krum—Grain Elevator.—Bewley Mill & Elevator Co. will rebuild grain elevator reported burned at estimated loss of \$5500.

Tex., Hillsboro—Grain Elevator.—Marvel Mill Co. will build grain elevator.

Va., Richmond—Bottling.—Corona Springs Co., capital \$300,000, incptd.; Wm. H. Mann, Pres., Petersburg; C. W. Crowder, Jr., Secy., Richmond.

Va., Roanoke—Printing Plant.—Hammond Printing & Lithographing Co. let contract A. L. Marshall, Heins Cigar Bldg., Roanoke, to erect building for printing plant; let contract for structural steel to Virginia Bridge & Iron Co., Roanoke; fireproof construction; steel and concrete; brick; 50x90 ft.; 4 stories; designed for adding 6 stories; estimated cost \$40,000; building equipment to include freight and passenger elevators, sanitary plumbing, etc.; printing machinery to include individual electric motors; C. H. Hinnant, Archt., Strickland Bldg., Roanoke. (Lately noted.)

MISCELLANEOUS FACTORIES

Ala., Attalla—Well Buckets.—W. L. Woolley organizing company with \$50,000 capital stock to mfr. patented well bucket for drilled wells.

Ala., Scottsboro—Bottling.—Coca-Cola Bottling Co., capital stock \$3000, incptd. by F. A. Noll, R. A. Wardlaw, R. B. Cooke and others.

Ark., Bergman—Plows.—Garrison Revolving Plow Co. will build lately-noted plant to manufacture combined breaker and cultivator; J. G. Taylor, Pres.; W. H. Harp, V.-P. and Mgr.; Jas. White, Secy.; W. A. Greenfield, Treas.; erect 48x144-ft. mill-construction building; machinery cost \$3000; needs boilers and engines. (See Machinery Wanted.)

Ark., Conway—Peanut Products.—Conway Cotton Oil & Gin Co. is considering installation of machinery to crush peanuts and extract oil.

D. C., Washington—Chemicals.—Santylne Chemical Co., capital stock \$50,000, incptd. by Alphonso O. Tingley, 2805 14th St.; John W. Conner and E. Ford.

Fla., Jacksonville.—Arthur F. Price of St. Louis, Mo., is reported to incorporate company with \$200,000 capital stock to establish tannery; temporary offices with Arnold & Perry, Jacksonville.

Fla., Pensacola—Mattresses.—Pensacola Mattress Co., capital stock \$20,000, incptd.; Chas. Perry, Pres.; R. M. Wells, V.-P.; A. H. McLeod, Secy.-Treas.

Fla., Tampa—Drinking Fountains, etc.—Regar Fountain Co., capital stock \$50,000, incptd.; J. F. Pierce, Pres.; D. W. Shea, V.-P.; Chas. Gerkin, Secy.-Treas.

Fla., Tampa—Preservative Paints.—Kennon Wood Preservative Co., capital stock \$25,000, incptd.; will manufacture preservative paints; D. W. Tompkins, Pres., Ocala, Fla.; Chas. W. Kennon, V.-P., Tampa; L. W. Duval, Secy., Ocala; A. P. Stuckey, Treas., Ocala.

Ga., Rome—Marble and Granite.—Georgia Granite and Marble Works, capital stock \$20,000, incptd. by John L. Harris, Julian Moses and others.

Ky., Campbellsburg—Bottling.—Coca-Cola Bottling Works, capital \$5000, incptd. by Hugh B. Webb, Jas. H. Barclay and Mrs. Della B. Lee.

Ky., Louisville—Candy, etc.—Rudolph & Bauer, capital stock \$50,000, incptd. by Jos. Rudolph, Fred A. Bauer and Carrie Rudolph.

Ky., Louisville—Bakery.—Grocers' Biscuit Co., 654 S. 7th St., let contract Paradise Construction Co., Louisville, to erect building to cost \$40,000; 80x210 ft.; mill construction; 3 floors and basement; sprinkler system; Loomis & Hartmann, Archts., Louisville.

Ky., Louisville—Soap.—Louisville Soap Co. acquired factory and site of Louisville Cotton Oil Co. at Floyd and K Sts. and contemplates building plant.

Ky., Middlesboro—Gloves.—Middlesboro Mfg. Co., manufacturer of overalls, will add department for manufacturing gloves.

Ky., Paducah.—McKinney-Guedry Co. (lately noted incptd.), capital stock \$25,000, operates plant of Paducah Vinegar Works; plant equipped; R. W. McKinney, Pres. and Mgr.; T. P. Guedry, V.-P.; H. C. Elliott, Secy.-Treas.

Md., Baltimore—Chocolate.—Chocolate Products Co., Charles G. Guth, Pres., Pratt and Confort Sts., manufacturing confectioner, will increase capacity by 15,000 lbs. daily; install machinery to cost about \$75,000. (See Machinery Wanted.)

Mo., St. Louis—Moving-picture Accessories.—Minusa Cine Products Co., capital stock \$100,000, incptd. by Wm. L. Schoening, Edward A. Raithel, F. M. Sowle and others to manufacture moving-picture projection screens and accessories.

Mo., St. Louis—Gelatin Products.—Translaine Products Co., capital stock \$100,000, incptd. by Wm. L. Achenberg, Edward A. Raithel, F. M. Sowle and others.

Mo., St. Louis—Medicine.—Warner Medicine Co. incptd. by H. R. Fisher, Jennie R. Fisher and others.

Mo., St. Louis—Clothing.—Moss-Strauss Mfg. Co. organized with Benj. J. Strauss, Pres. and Herman Moss V.-P. and Secy.; leased northern 50 ft. of first floor and all of 2d and 3d floors of 3-story building, 30x135 ft., at 20th and Locust Sts. (Lately noted incptd. with \$33,000 capital stock.)

N. C., Durham—Bottling.—Durham Lemon-Kola Bottling Co., capital stock \$7500, incorporated by J. W. Stone, A. S. Adams and R. R. Hooker.

N. C., Greensboro—Wagon Brakes.—Windlass Wagon Brake Co. organized by H. C. Marley of Greensboro, Z. V. Crutchfield of Thomasville and others to manufacture patented wagon brake.

N. C., Weldon—Bottling.—Weldon Pepsi-Cola Co., capital \$5000, incptd. by H. A. Hardison, M. Barrington and J. T. Phillips.

Okla., Muskogee—Gloves, etc.—American Glove & Knitting Co. incptd.; Wm. L. Lindhard, Pres.; T. J. Carey, V.-P.; R. S. Davis, Secy.-Treas.; will manufacture gloves and socks; plant equipped; present daily output, 200 pairs gloves; needs canton cloth. (See Machinery Wanted.)

S. C., Charleston—Lime.—Georgia-Carolina Lime Co. increased capital from \$70,000 to \$150,000.

Tenn., Memphis—Bedding.—National Bedding Co., capitalized at \$25,000, incptd. by G. G. Bowstick, J. H. Patton, H. A. Potts, H. P. Patton and J. D. Jack.

Tex., Harriman—Monuments.—Harriman Granite & Marble Co. will let contract in March for building lately noted to be erected; 25x60 ft.; cost \$2000; install complete equipment monument-building machinery.

Tex., Sherman—Overalls.—Sherman Overalls Mfg. Co. is reported to increase capital stock and provide additional facilities.

Va., Fredericksburg—Cigars.—Geo. W. Herling plans to establish cigar factory.

Va., Lynchburg—Ice-cream.—Lynchburg Dairy & Ice-Cream Corp., capital stock \$100,000, chartered; R. D. Martin, Pres.; J. McC. Ache, Secy.

Va., Norfolk—Silverware.—Hampton Roads Silver Co., capital stock \$100,000, incptd.; E. C. Hathaway, Pres.; J. N. Luke, Secy.

Va., Portsmouth—Pulp and Paper.—Oliver Pulp & Paper Co., capital stock \$60,000, incptd.; Wm. Oliver, Pres., Portsmouth; J. Pearson Williams, Secy.-Treas., Norfolk.

Va., Richmond—Syrups.—Adam-Christian Co., capital \$15,000, incptd.; John Adam, Pres.; Allen G. Collins, Secy.

Va., Richmond—Films.—Equitable Film Corp., capital \$2,000,000, chartered; L. W. Bromm, Pres.; Henry R. Miller, Jr., V.-P.; L. L. Lacy, Secy.-Treas.

Va., Tazewell—Creamery.—A. E. Downen of Thompsonville, Ill., is reported to establish creamery.

W. Va., Bluefield—Ice-cream, etc.—Jno. Husbands & Bro. will manufacture ice-cream and milk products; machinery contracts let. (See Ice and Cold-storage Plants.)

MOTORS AND GARAGES

D. C., Washington—Garage.—Albert E. Landvoigt, 713 14th St. N. W., is preparing plans for garage.

Fla., Starke—Garage.—De Witt C. Jones will erect garage for G. C. Livingston; structure to be 25x30 ft.; brick; concrete floor; fireproof roof.

Ky., Louisville—Automobiles, etc.—Hercules Sales Co., capital stock \$100,000, incptd. by Alonzo H. Ross, Chas. L. Caron, Jas. R. Duffin and others.

Mo., St. Louis—Automobiles, etc.—Motor Car Repair & Supply Co., capital stock \$2000, incptd. by F. W. Kretschmar, Frank Schneider and Aug. R. Hoffman.

Mo., Kansas City—Automobiles.—Myers-Ebersole Motors Co., capital \$10,000, incptd. by J. W. Ebersole, W. D. Myers and W. A. Boring.

Okla., Tulsa—Garage.—Dr. W. Albert Cook let contract to build garage; steel, concrete and brick; 72x140 ft.; one story; steam heat; cost \$12,000.

Tenn., Chattanooga—Automobile Supplies.—Southern Auto Supply Co., capital \$25,000, incptd. by T. F. Sanford, C. H. Huston, D. A. Graves and others.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

W. Va., Cameron.—Baltimore & Ohio R. R., F. L. Stuart, Ch. Engr., Baltimore, Md. (lately noted to rebuild shop), states is having repairs made by company's force.

ROAD AND STREET WORK

Ala., Tuskegee.—City, E. W. Thompson, Mayor, let contract to W. C. Campbell, Columbus, Ga., at 49 cents per lin. ft., to construct about 10,000 ft. curb and gutter; F. L. Thirkield, Engr., Tuskegee. (Bids lately noted; \$19,000 available.)

Ark., Devall Bluff.—Prairie County Road Improvement Dist. No. 1 will build 13 mi. stone road; cost \$60,000; no contracts; construction under supervision of Comms., who will employ road builder; F. A. Pritchett, Engr.; bonds lately noted sold; roller and sprinkler needed. (See Machinery Wanted.)

Ark., Fort Smith.—Sebastian County Commissioners will build boulevard from Fort Smith Light & Traction Co.'s car barns on both sides of company's car tracks to Fort Smith and Van Buren bridge, about 2½ mi.; cost \$8000 to \$9000.

Fla., Miami.—City will lay 6000 ft. concrete sidewalk in Dists. Nos. 1 and 2; Biscayne Construction Co. is lowest bidder.

Fla., Tavares.—Lake County Comms. have detailed plans to construct 200 mi. of road work, to include following: 1,091,946 lin. ft. roadway; 329,630 cu. yds. excavation; 1,147,610 sq. yds. pavement; 301.62 cu. yds. concrete; 1554 lbs. square deformed steel; 5146 lbs. R. C. steel; 885 lin. ft. terra-cotta drains; 1552 ft. pole line to be moved; 57 bridges; 3 classes of surfacing are proposed—sand-clay, sand and asphalt (modified asphalt), and oiled macadam; probable that first-named type will be used on lateral roads and last two on main and semi-trunk highways, oiled macadam being used on those having heaviest traffic; Engr., J. B. McCrary Co., Third National Bank Bldg., Atlanta, Ga. (Commissioners lately noted as having postponed date of opening bids from Dec. 31 and to invite new bids probably within 60 days.)

Ga., Quitman.—City let contract Gulf Paving Co., Chattanooga, Tenn., to construct 25,000 sq. yds. asphaltic concrete paving and sidewalk paving; 10-mi. walk; \$100,000 available; O. H. Lang, City Engr. (See Machinery Wanted.)

Ky., Carlisle.—Nicholas county votes Mch. 28 on \$125,000 bonds to construct roads; contemplates repair and reconstruction of 2.65 mi. macadam road; Jos. W. Williams, Engr.; Jas. Mitchell, Judge Nicholas Fiscal Court.

Ky., London.—Laurel county is reported as contemplating bond issue to construct roads. Address County Comms.

Ky., Louisville.—Board of Public Works let

contract American Standard Asphalt Paving Co. of Louisville at \$7950 to pave Hill St. from 4th to 6th St. with bituminous concrete; vitrified brick gutters and granite block stringers. (Call for bids lately noted.)

Ky., Louisville.—City will reconstruct Market St. from Jackson to Hancock St., and Lytle St. from 15th St. 190 ft. west with vitrified blocks; estimated cost, \$5500; Board of Public Works receives bids until Jan. 27.

Ky., Maysville.—Mason County Comms. ordered election Apr. 10 to vote on \$300,000 bonds for road construction.

Ky., Somerset.—Pulaski County Comms. will construct highway connecting county-seat (Monticello) of Wayne county and county-seat (Stamford) of Lincoln county; this road to connect with proposed Boone Way; \$61,000 available.

Ky., Mt. Vernon.—Rockcastle county contemplates voting on \$100,000 bonds to construct roads. Address County Comms.

Md., Emmitsburg.—State Roads Com., Garrett Bldg., Baltimore, let contract Bester-Long Construction Co., 40 E. Baltimore St., Hagerstown, at \$13,282.19 to construct road from Emmitsburg to Pennsylvania State line, about 1 1/4 mi.

Md., North East.—State Roads Com., Garrett Bldg., Baltimore, let contract H. B. Sproul, Peekskill, N. Y., at \$6031.80 to construct road through North East.

Md., Salisbury.—Elmer C. Williams will build about 1 mi. cement pavement; probably in April. (See Land Developments.)

Miss., Gulfport.—Suprvs. of Harrison and Jackson counties will shell public road between Biloxi and Ocean Springs; let contract H. E. Latimer & Son of Biloxi; road already graded.

Miss., Jackson.—City let contract Barber Asphalt Paving Co., Philadelphia, Pa., to resurface Capitol St.; cost about \$6000. (Lately noted call for bids.)

N. C., Hendersonville.—City contemplates building sand-clay streets. Address The Mayor.

N. C., Marshall.—Madison County Highway Com. contemplates grading and draining about 6.9 mi. road leading from Hot Springs; about 63,000 cu. yds. excavation; bids to be asked; J. B. Clingman, County Road Engineer.

N. C., Sanford.—Lee county voted \$100,000 bonds to construct roads. Address County Comms. (Lately noted.)

N. C., Wadesboro.—Anson County Comms. let contract J. T. Potts of Greensboro to construct about 6 mi. road from Wadesboro to Morven township line; cost about \$8000; Engrs., Kiker & Corr, 406 Trust Bldg., Durham, N. C. (Call for bids lately noted.)

Tenn., Chattanooga.—Hamilton County Court petitioned Legislature to authorize \$125,000 bond issue for Wauhatchie road around Point Lookout.

Tenn., Dover.—Stewart County Comms. ordered election for Feb. 6 to vote on issuing \$100,000 bonds to construct roads.

Tenn., Tullahoma.—Tullahoma & Lynchburg Turnpike Co., capital stock \$60,000, incptd. by Dr. J. A. Mitchell, C. T. Phillips, O. C. Richardson and others to construct gravel road from Tullahoma to Lynchburg, 12 mi.

Tex., Abilene.—City voted \$45,000 bonds for street paving. Address The Mayor.

Tex., Corpus Christi.—City let contract W. L. Pearson & Co. at about \$18,000 to construct macadam road surface across causeway; two other contracts totaling \$135,290 for work in connection with this bridge previously reported let to this company.

Tex., Corsicana.—City (lately noted to pave 2d Ave.) will construct gravel macadam with asphalt cover; date of opening bids not set; Geo. A. Duren, Engr.

Tex., Fort Worth.—City Comms. considering construction of 3 1/2 mi. of asphalt and macadam streets to connect at city limits with 4 cardinal county roads.

Tex., Gainesville.—Cooke county will improve roads; \$50,000 loan available. Address County Comms.

Tex., Galveston.—City will construct about 21,300 sq. yds. vitrified brick pavement; bids until Jan. 21; H. O. Sappington, Commr. of Street and Public Property; A. T. Dickey, City Engr. (See Machinery Wanted.)

Tex., Houston.—Harris County Comms., W. V. Burnell, Engr., decided upon improvements for 40 mi. of roads, to include repairing Westheimer Rd., about 8 1/2 mi., and Main St. Rd., about 3 mi.

Tex., Marshall.—City, H. S. Rice, City Secy., will construct about 9000 sq. yds. asphalt macadam or asphaltic concrete pavement, with concrete curbs, gutters, drainage,

etc.; bids until Jan. 26. (See Machinery Wanted.)

Tex., Midlothian.—City will construct 4000 lin. ft. cement walks; will also macadamize streets; estimated cost \$2500; T. M. Dees, Mayor.

Tex., Palo Pinto.—Palo Pinto county will improve roads in Road Dist. No. 1 aggregating 36.7 mi. on 9 roads; concrete bridges and culverts in connection; Comms.' Court invites bids until Feb. 8; J. W. Brock, County Clerk; Jas. C. Travilla, Engr., Mineral Wells; lately noted. (See Machinery Wanted.)

Tex., Pecos.—Reeves County Comms.' Court will receive bids until Feb. 8 to construct roads in Road Dist. No. 1; about 65 mi. of grading, of which about 30 mi. may be gravel surfaced; expend \$80,000 bonds; plans and specifications are being prepared and will be on file at County Clerk's office.

Tex., Port Lavaca.—City is considering voting on bonds for graveling streets and drainage. Address The Mayor.

Tex., Sherman.—Grayson County Road Dist. No. 3 votes Feb. 20 on \$10,000 bonds to construct roads. Address County Comms.

Tex., Terrell.—O. F. Walton Lumber Co. of Terrell has contract at \$3497.50 to construct sidewalks, drains, etc., at U. S. Post-office.

Va., Richmond.—City will construct certain granolithic work; bids opened Jan. 13; Chas. E. Bolling, City Engr.

Va., Richmond.—City let contract H. H. George at about \$20,000 to pave Grace St. from Robinson St. to Boulevard; Chas. E. Bolling, City Engr. (Lately noted.)

Va., Richmond.—Henrico County Suprvs. let contract to J. C. Cheatwood Co. to construct 1/2-mi. water-bound macadam on Broad St. Rd. from corporate limits to Country Club; Board also arranged to improve Creighton Rd. from corporate limits to Chickabomby Swamp.

Va., Richmond.—Henrico county will construct 4 1/2 mi. gravel highway on Creighton Rd., between city limits and Chickabomby bridge in Henrico county; plans, etc., on file at office County Clerk; bids received until Feb. 1; G. P. Coleman, State Highway Commissioner. (See Machinery Wanted.)

W. Va., Wayne.—Wayne County Court is reported to construct hard road from Credo to Cabell county line.

W. Va., Huntington.—City Comms. contemplates building gravel walks in proposed new section of city park.

W. Va., Parkersburg.—City votes Feb. 2 on \$200,000 bonds to pave, construct sidewalks, curbing and sewers upon certain streets and alleys; Allen C. Murdoch, Mayor. (Lately noted.)

SEWER CONSTRUCTION

Ark., Little Rock.—City will construct about 1 mi. of sewers; 10, 12 and 15-in. vitrified sewer pipe; Board of Public Affairs, Chas. E. Taylor, Prest., City Hall, receives bids until Jan. 21. (See Machinery Wanted.)

Ark., Rector.—City invites bids for purchase of \$27,000 sewer bonds; J. C. Rogers, Chrm. Comms. (See Water-works.)

Fla., Atlantic Beach.—Atlantic Beach Corp. has plans by Isham Randolph & Co., Chicago, Ill., and Jacksonville, Fla., for previously-noted sewage-disposal plant; all equipment ordered placed and work will be by force account; 2 Miller pneumatic sewage ejectors; Imhoff tank; 4 mi. vitrified pipe; cost \$30,000.

Fla., New Smyrna.—City voted \$12,000 bonds to construct sewer system; estimated cost, \$36,000, two-thirds to be paid by property owners. Address The Mayor. (Lately noted.)

Ga., Hartwell.—City let contract J. B. McCrary Co., Atlanta, Ga., to install sewer system and water-works; \$46,000 bonds available. (Bids lately noted.)

Md., Baltimore.—City let contract B. F. Sweeten & Son, 520 E. 30th St., at \$63,825.45, and M. O'Herron & Sons, 843 N. Howard St., at \$35,941.93 to construct sanitary sewers. (Call for bids lately noted.)

Md., Hancock.—City let contract W. Harry Angle, Hagerstown, Md., to construct sewer system; 6, 8 and 10-in. terra-cotta pipe; cost \$8300; plans by Alfred Quick, Engr., Munsey Bldg., Baltimore. (Lately noted having plans prepared; noted in August as voting \$30,000 bonds for sewers and water-works.)

Md., Hagerstown.—City will appoint Sewerage Com. to plan installation sewerage system; J. McPherson Scott, Mayor.

Md., Salisbury.—Elmer C. Williams contemplates construction of about 3000 to 5000

lin. ft. 8, 10 and 12-in. sewer pipe. (See Machinery Wanted.)

Mo., Carthage.—City let contract Plummer, Adams & Co. of Springfield, Mo., at \$17,552.82 to construct sewers; 5835 ft. 10-in., 2630 ft. 12-in. and 5570 ft. 15-in. tile; Frank B. Newton, Engr. (Call for bids lately noted.)

Okla., Drumright.—City voted bonds to construct sewer system and improve parks. Address The Mayor.

Okla., Tulsa.—City let contract to E. F. Dunn to construct laterals in Maple Ridge and South Side additions; 10-in. and 8-in. pipe; cost \$9000; T. C. Hughes, City Engr. (Bids lately noted.)

S. C., Anderson.—City contemplates completing Ludlow system of sewers; require about 50,000 lin. ft. of additional 8 to 12-in. terra-cotta sewers; estimated cost \$25,000; date of bonds election not yet set; W. A. Sanders, City Engr.

Tex., Dallas.—City let contract Dallas Lime & Gravel Co. at \$2600 to extend Elm St. sanitary sewer to public comfort stations at Elm and Ervay Sts.

Tex., San Benito.—City, J. H. Lyons, Mayor, will construct septic disposal plant and extend present system; as lately stated, votes Feb. 2 on \$5000 bonds. (See Machinery Wanted.)

Tex., Teague.—Teague Sewer Co., capital stock \$30,000, incptd. by J. W. Philip, W. R. Boyd, Jr., and H. R. Reilly.

Va., Dayton.—City votes Feb. 15 on \$24,500 bonds to construct sewer system, etc.; lately noted. Address The Mayor. (See Electric Plants.)

W. Va., Parkersburg.—City votes Feb. 2 on \$200,000 bonds to construct sewers, etc. Allen C. Murdoch, Mayor. (See Road and Street Work.)

TELEPHONE SYSTEMS

Md., Centerville.—Chesapeake & Potomac Telephone Co. (main office, 5 Light St., Baltimore, Md.) plans to erect concrete exchange building.

Miss., Natchez.—Cumberland Telephone & Telegraph Co. (main office, Louisville, Ky.) is reported as contemplating improvements and extensions to cost \$10,000 to \$12,000.

N. C., Gatesville.—Gates Telephone Co., capital stock \$15,000, incptd. by Matthew Riddick, Jr., T. G. Hayes, J. W. Brown and others.

Va., Richmond.—Home Telephone & Telegraph Co., capital stock \$100,000, incptd.; J. P. Taylor, Prest., Richmond; A. Maupin, Secy.-Treas., Atlanta, Ga.

W. Va., Williamson.—Chesapeake & Potomac Telephone Co., S. M. Greer, General Commercial Supt., 108 E. Lexington St., Baltimore, Md., purchased property of Williamson Telephone Co.; contemplates improvements; not yet made definite plans; work by the company.

TEXTILE MILLS

Ga., Columbus—Hosliery.—J. K. King and Hubert Murray plan organization company to establish mill with daily capacity 250 doz. prs. knit hosiery.

Ga., Macon.—Knit Underwear.—Southland Knitting Mills reported as to provide for improvements; lately completed installation new machinery costing about \$1000.

N. C., Henrietta.—Cotton Cloth.—Henrietta Mills will, it is reported, install large number automatic looms; has 75,000 ring spindles, 1872 looms, etc.

N. C., Icard, R. F. D. from Hickory.—Icard Mfg. Co., capital stock \$125,000, incptd. by D. B. Null, Stanley Ferry and A. L. Wilson, all of Connellys Springs, N. C.

Va., Williamsburg.—Knit Goods.—Old Dominion Knitting Mill, capital stock \$15,000, incptd.; John McGinnis, Prest.; Edmund Fain, Secy.-Treas.

WATER-POWER DEVELOPMENTS

Ala., Birmingham.—People's Hydro-Electric Power Co., capital stock \$20,000, incptd.; plans development Coosa River, passing over Ten Islands, Whisenant and Leota Shoals; proposes to construct dam and power-house at Lock 2, near Wood's Island, under Government authority and supervision; R. H. Cobb, Prest.; S. H. Richardson, Secy., both of Birmingham; Clem Jones, V.-P. and Treas., Obatchie, Ala.

WATER-WORKS

Ark., Rector.—City invites bids until Feb. 3 to drill 10-in. wells; also until same date for purchase of \$29,000 water-works and \$27,000 sewer bonds; Frank L. Wilcox, Consult.

Engr., Syndicate Trust Bldg., St. Louis, Mo.; J. C. Rogers, Chrm. Comms. (See Machinery Wanted.)

Ark., Rison.—City will expend \$25,000 on construction of lately-noted water-works and electric-light plant; erect two \$3000 stone buildings; reservoir capacity, 50,000 gals.; bids or prices to be asked upon sale of bonds; A. C. Moore, Engr., Joplin, Mo. Address Dr. A. B. Robertson, Rison.

D. C., Washington.—Dist. Comms. let contract Melton Construction Co., 1012 H St. N. W., at \$18,000 to build 1-story repair shops at 2d and Bryant Sts. for Water Dept. (Lately noted.)

Fla., Bonifay.—Bonifay Light & Water Co., A. L. Byrd, Engr., will install distributing system at cost of about \$3000; motor-driven triplex pump; date of opening bids not set; deep well already driven and tank erected.

Fla., New Smyrna.—City voted \$47,000 bonds to construct water-works. Address The Mayor. (Lately noted.)

Ga., Hartwell.—City let contract J. B. McCrary Co., Atlanta, Ga., to install water-works and sewer system; \$46,000 available. (Bids lately noted.)

Ga., Quitman.—City let contract to construct water-works and electric-light plant; \$40,000 bonds voted. Address The Mayor.

Md., Baltimore.—City let contract Westinghouse Electric & Mfg. Co., Pittsburgh, Pa., at \$13,294 to install electrical equipment at upper service pumping station to be constructed near Park Heights Ave. entrance to Druid Hill Park; contract to erect station lately reported let to D. M. Andrew Co., 600 Equitable Bldg., Baltimore.

Md., Braddock Heights.—Braddock Heights Water Co., O. B. Coblenz, Prest., will construct storage reservoir to conserve water supply for use during summer; considering construction of reservoir in units, first unit to have capacity 200,000 gals.; present reservoir supplies about 165,000 gals.; considering using electricity to operate pumping station.

Md., Frederick.—City has report from Wm. H. Borden, Engr., Philadelphia, Pa., recommending construction storage reservoir of 20,000,000 gals. capacity.

Mo., Joplin.—City is reported as contemplating constructing water-works. Address The Mayor.

Mo., Slater.—City granted franchise T. C. Brooks & Son to furnish water for 20 years; 8-mi. pipe line to Missouri River; L. E. Shepherd, Supt.

N. C., Durham.—City considering water-works for which plans and estimates were lately noted submitted by Gilbert C. White, Engr., Charlotte, N. C.; he advises that plans contemplate construction on Flat River of fireproof pumping station with 2 pumps of 3,000,000 gals. each; pumps probably centrifugal, direct connected to steam turbines, operating condensing; 8 mi. 20-in. cast-iron pipe line to raw water storage reservoir of 35,000,000 gals. capacity, built of earth embankments lined with concrete, and located in city; fireproof pumping station, containing 3 pumps 3,000,000 gals. capacity each, one of these probably crank and fly-wheel, operating condensing, and one steam turbine-driven centrifugal; 3,000,000-gals. capacity filter plant; concrete coagulating basin; if city purchases Durham Water Co. plant, plans described will be combined with existing distribution system and reservoir; estimated cost about \$500,000; bids to be asked. (Bonds previously noted voted, etc.)

Okla., Cordell.—City will let contract latter part of January to improve water-works; \$75,000 bonds authorized. Address The Mayor.

Okla., Guthrie.—City defeated \$50,000 bond issue to extend water-works. (Lately noted.)

Okla., Hugo.—City contemplates installing chlorine-treatment plant; H. G. Hixson, Supt.

Okla., Oklahoma City.—City defeated \$240,000 bonds to construct reservoir and additional clear-water well. (Lately noted.)

Okla., Yale.—City voted \$32,000 bonds to extend water-works and build electric-light plant. E. A. Pierson, Clerk.

Tenn., Dyersburg.—City is considering purchase of 1,000,000-gal. 2-phase centrifugal pump, directly connected to 230-volt 3-phase motor, and 40-gal.-per-min. centrifugal pump directly connected to 20-volt 3-phase motor; S. R. Blakeman, Supt. Water and Light Plant.

Tenn., Dyersburg.—City contemplates purchasing and installing 1,000,000-gal. 2-stage centrifugal pump directly connected to 230-volt 3-phase motor for Water and Light Dept.; S. R. Blakeman, Supt.

Tex., Corpus Christi.—City let contract Home Heating & Plumbing Co., Louis Lock,

Propr., 219 S. Grand St., Monroe, La., at \$286,211 to construct water-works system to include pumping station, equipment and pressure filter plant; 16 ml. 20-in. cast-iron water mains; 250,000-gal. steel water tank; increase daily capacity of present water plant from 600,000 gals. to 10,000,000 gals.; \$300,000 bonds voted; Alex. Potter, Const. Engr., 50 Church St., New York; H. A. Stevens, City Engr.; contractor advises has let subcontracts for greater portion of this work. (Call for bids lately noted.)

Tex., Sweetwater.—City Com. let contract E. L. Dalton of Dallas to excavate trenches for new water system.

Tex., Temple.—City contemplates construction of concrete dam and spillway over Leon River at pumping station to replace wooden structure; estimated cost, \$25,000. Address The Mayor.

Va., Richmond.—City contemplates extending water mains to Oak Grove; estimated cost \$28,252.20; Chas. E. Bolling, City Engr.

WOODWORKING PLANTS

Ala., Mobile.—Boxes and Crates.—Ideal Box & Crate Co., Griffin H. Deever, Prest., Chicago, will manufacture folding boxes and crates; needs saws and other machinery; lately noted inceptd., capital stock \$2000. (See Machinery Wanted.)

Ark., Fayetteville.—Furniture.—J. P. Brower is reported as planning establishment of factory for black walnut furniture.

Ark., Pine Bluff.—Flooring.—Arkansas Oak Flooring Co., capital \$50,000, inceptd. by H. W. Coles, Jas. W. Reynolds and others; will build oak flooring plant, to have daily capacity 30,000 ft.

Ky., Louisville.—Boxes and Baskets.—Falls City Box & Basket Co., W. O. Anderson of Henderson, Ky., Prest., will open bids Jan. 20 to erect 80x154-ft. 2-story building of fireproof and mill construction; plans by Brinton B. Davis, 1909 Inter-Southern Bldg., Louisville. (Lately noted organized, capital stock \$50,000.)

Md., Easton.—Furniture.—Easton Furniture Mfg. Co. will install sprinkler system; equipment to include tank with capacity of 40,000 gals. water on tower 70 ft. high; cost \$12,000 to \$13,000.

Miss., Columbus.—Silos.—Southern Mfg. Co. is reported to install equipment to manufacture silos.

N. C., Castle Hayne.—Shingles and Hampers.—Riverside Mfg. Co., capital stock \$25,000, inceptd. by H. L. Vollers, D. McEachern and W. A. Mahler; takes over property of Independent Mfg. Co.; make shingles and vegetable hampers.

S. C., Columbia.—Barrel Staves.—J. C. Brewerton of Fayetteville, N. C., will build barrel-stave plant 4 mi. from Columbia; has 5-acre timber tract and plans to manufacture timber in woodworking plant; construct 12-mi. railroad.

Tenn., Cleveland.—Chairs.—Cleveland Chair Co. purchased site on which to build plant.

Va., Nokesville.—Poultry Crates.—H. M. Daniel and others are interested in proposed establishment of plant to manufacture coops or crates for poultry shipping. (See Machinery Wanted.)

FIRE DAMAGE

Ala., Birmingham.—Geo. F. Riddle's residence.

Ala., Birmingham.—J. D. Harlett's residence at 2313 22d Ave. North; loss about \$3000.

Ala., Cottonwood.—C. T. Kennedy's store, Clark's drug store and Woodmen's hall, Carroll's garage and Masonic hall, W. C. Granger's grocery store, Outlaw's garage.

Ark., Argenta.—Acme Garage, 716 E. Washington St., owned by Frank Collins; N. Gersner's residence, 718 E. Washington St.; Geo. Elchoff's 2 residences at 720-22 E. Washington St.; total loss \$20,000.

Ark., Blytheville.—Blytheville Laundry, owned by J. T. Hall and Spencer Semmes.

Ark., Dermott.—W. W. Courtney's store; loss \$6000.

Ark., Heber Springs.—Cleburne County Bank building, containing bank, Dashiell's drug store, Gribble & Glenn grocery store, law office of Mitchell & Thompson and office of Dr. Horace E. Ruff; total loss about \$25,000.

Ark., Springdale.—New York Store, loss \$7000 to \$10,000; Umbaugh Bros.' store, loss \$5000 to \$7000; C. H. Hewitt's building, loss \$3500; G. A. Graves' building, loss \$3500.

Ark., Tyrone.—Stewart Bros.' store; loss \$5000.

Fla., Bishopville.—R. J. Bishop's store and warehouse; loss \$5000.

Fla., Pensacola.—Forty-room sanitarium, owned by Drs. R. L. and Herbert L. Bryans.

Fla., South Jacksonville.—George Gill's residence near Point LaVista.

Fla., Whittier.—J. A. O'Berry Hotel.

Ga., Manchester.—C. B. Thomas' residence.

Ga., Pendergrass.—Pendergrass Oil Mill's main building and boiler-room.

Ky., Louisville.—Building owned by Jake Greenberg and occupied by Royal Photo Co.; loss \$5000.

Ky., Louisville.—Louisville Hotel's roof of engine-house; loss \$4000.

Md., Brunswick.—Opera-house, belonging to Otto Kamberger, Fayette and Howard Sts., Baltimore; loss about \$20,000.

Md., East New Market.—Webster & Reed's grocery store, loss \$3000; residence of Harry Webster.

Md., Ellicott City.—Marshall Bacon's store, building owned by Edward E. Malone, loss \$1500; Charles A. Burke's store, loss \$10,000; Greek Candy Kitchen, building owned by Mrs. Elizabeth O'Brien, loss \$6000; Charles B. Wallenhorst's store, loss \$3000; postoffice building, owned by Grant Oldfield, loss \$6000; Dr. J. Hartley Johnson's drug store, loss \$3000; Taylor-Ridgely livery stable.

Md., Hagerstown.—Potomac Valley Lime Co.'s 3 frame cottages at Pinesburg; loss \$5000.

Md., Pinesburg, R. F. D. from Williamsport.—Potomac Valley Stone & Lime Co.'s plant; estimated loss \$5000.

Miss., Meridian.—Dwellings of S. M. Houston and S. P. Sims.

Miss., Vicksburg.—Mrs. Hattie Crittenden's residence near Vicksburg.

Miss., Washington.—Two-story frame dormitory of Jefferson Military College; loss \$5000.

Mo., Carrollton.—Jarboe Milling Co.'s plant not burned. (Recent report incorrect.)

Mo., Forsyth.—Administration building of School of the Ozarks.

Mo., Higginsville.—Merchants' Hotel.

Mo., Kansas City.—Corn Belt Bank Bldg.; loss \$75,000.

Mo., Moselle.—P. Sauerwald estate's building; Elmer Fisher's store; postoffice; C. H. Pipkin's 2 buildings; Edw. Pipkin's 2 buildings; T. G. Wiley's grainhouse; total loss \$25,000.

Mo., Savannah.—W. H. Clashey's store; J. B. Cooper's store; Andrew County Telephone Exchange; J. E. Hall's store; Keesee Dry Goods Co.'s store; total loss \$75,000.

Mo., St. Joseph.—American Hominy Co.'s plant, loss \$110,000 to \$150,000; St. Joseph Transfer Co.'s stables; estimated loss \$5000.

Mo., St. Louis.—Sperry Mfg. Co.'s plant, manufacturing grocers' sundries, at 318 N. Main St.

Mo., University, Sta. St. Louis.—Residence of Jackson Johnson, Prest. of International Shoe Co.; loss about \$100,000.

N. C., Battleboro.—M. P. Braswell's warehouse; loss \$15,000.

N. C., Charlotte.—D. Parks Hutchison's building, occupied by S. H. Kress & Co.; loss on building about \$25,000.

N. C., Charlotte.—Lambert Kuhn's residence at 209 E. Boulevard, owned by Chatham Estates, Inc.; loss \$5000.

N. C., Hot Springs.—Hot Springs Supply Co.'s store; loss about \$15,000.

S. C., Chesterfield.—Colon Davis' residence.

S. C., Blenheim.—E. W. Weatherly's cotton gin.

S. C., St. Charles.—T. E. Cooper's 2 stores and stock, loss \$8000; M. T. Mathis' store and stock, loss \$7500.

N. C., Statesville.—Dwelling, owned by C. S. Tomlin and occupied by Fred H. Conger; loss several thousand dollars.

N. C., Townsville.—Three stores owned by South Hill Mfg. Co.; 4 dwellings owned by Bullock Bros.; total loss \$14,000.

S. C., Greer.—Thos. B. Snow's residence; loss \$3000.

Tenn., Athens.—John Reed's warehouse, occupied by Richard Akle.

Tenn., Camden.—Lashee Hotel; loss \$6000 to \$10,000.

Tenn., Nashville.—Harley-Holt Furniture Co.'s store at 317-19 Broadway; loss \$10,000.

Tenn., Harriman.—Harriman Land Co.'s dwelling across Emory River from Harriman, occupied by John J. White.

Tenn., Savannah.—W. W. Young's store; loss \$3000.

Tenn., Sewanee.—Kappa Alpha chapter house of University of South; loss about \$3000.

Tenn., South Pittsburg.—M. Coplan's Fashion Department Store, building owned by B. Benkovitz of Chattanooga, Tenn.; loss \$20,000.

Tex., Clarendon.—Clarendon Grain Co.'s livery barn, thrasher, separator and shuck-house; loss \$5000.

Tex., Corsicana.—Alliance Grocery Store, Edens & Walker, proprietors; loss \$10,000.

Tex., Hillsboro.—S. H. Allred's blacksmith shop, building being owned by Bob Corbett; implement loss \$5000; building loss \$2500.

Tex., Houston.—Rooming-house at 503 Walker Ave., occupied by Margaret Pestell and owned by Dan Hall, Dallas; loss \$10,000.

Tex., Krum.—Bewley Mill & Elevator Co.'s elevator; estimated loss \$5500.

Tex., Madisonville.—Dorman & Ferguson's gin; loss \$3000.

Tex., Mart.—Hillman Drug Co.'s store; loss \$15,000.

Tex., Mt. Pleasant.—M. Greenshush's building; loss \$25,000.

Tex., Nacogdoches.—Building occupied by Perry Electric Co., J. H. Thomas, D. M. Sanders and D. E. Clifton; loss \$8000.

Tex., Paris.—Gibbons High School on Provine St.; loss \$5000. Address The Mayor.

Tex., Plano.—J. P. Spillman's 3 buildings; loss \$22,350.

Tex., Rosebud.—First National Bank Bldg.; loss about \$8000.

Tex., Temple.—Park Hotel, owned by A. S. Buchanan.

Tex., Tenaha.—McKinley Hotel; loss about \$3500.

Tex., Victoria.—Round House Trading Co.'s warehouse; loss \$3600.

Tex., Waxahachie.—Residence occupied by John Woods, owned by T. J. Cole; loss \$3700.

Va., Buena Vista.—W. T. Robey's stable; loss \$5000.

Va., Portsmouth.—Building at High and Crawford Sts., owned by F. P. Nash estate; loss \$20,000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—H. Abramson has plans for store and apartment building. (See Stores.)

D. C., Washington.—Hunter & Bell, 1421 H St. N. W., Washington, are reported preparing plans for 7-story apartment-house at Connecticut and Wyoming Aves.; cost \$400,000.

D. C., Washington.—Harry Wardman, 1430 K St. N. W., has plans by F. R. White, 1430 K St. N. W., Washington, for apartment-house at 17th and Willard Sts.; 7x168 ft.; 5 stories; fireproof; brick and concrete; slag roof; hot-water heat; electric lights; 2 electric elevators, passenger and freight; cost about \$250,000; construction by owner; sub-bidders are: Millwork, Barber & Ross, 614-22 11th St. N. W.; Geo. M. Barker, 649-51 New York Ave.; structural and ornamental steel, Barber & Ross, Alexandria Iron Works, A. S. Jorss, 313-17 13th St. N. W.; hardware, Kerner & Duerling, Rudolph & West Co., 1332 New York Ave. N. W.; Barber & Ross; glass, E. J. Murphy Co., 1710 12th St. N. W.; Hugh Reilly Co., 1334 New York Ave. N. W., all of Washington; also reported to erect similar structure at Florida Ave. and Decatur St. according to plans by same architect.

Ga., Savannah.—Julian M. Smith will erect 2-story apartment-house on W. Bolton St.

Mo., Kansas City.—C. F. Davis will erect 2 six-apartment flats at 4020-26 Troost Ave.; 74-ft. frontage; cost \$40,000.

Mo., St. Louis.—J. Szepanski will erect 2-story tenement at 4317-19 Natural Bridge St.; cost \$4000; construction by owner.

Mo., St. Louis.—E. L. Moses will erect 2-story tenement-house at 4935 Wise St.; cost \$4000; construction by owner.

Mo., St. Louis.—E. L. Wagner Construction Co. will erect 2 three-story apartments on Westminster Pl.; cost \$30,000; construction by owner.

Mo., St. Louis.—Eugene Snyder will erect 2-story tenement-house at 5826 N. Market St.; cost \$3000; construction by owner.

Mo., St. Louis.—J. Gramlig will erect 2-story tenement-house at 5975 Wells Ave.; cost \$3400; construction by owner.

Okla., Tulsa.—David J. Kelly will erect apartment-house at 11th and Cincinnati Sts.; 1 story; 6 apartments of 3 rooms each.

S. C., Columbia.—James L. Denney plans to erect apartment-house; 12 three-story units; 36 apartments; cost \$75,000; Wilson & Sompayrac, Architects, Columbia.

Tex., El Paso.—J. E. Bischoff will erect tenement on Campbell St. to cost \$3500; dwelling at Mundy Heights, \$3500; tenement in Bassett Addition, \$1000; repair roof at 320 Leon St., \$1000.

Tex., Fort Worth.—John M. Dunn will erect apartment-house at S. Adams and Magnolia Sts.; 4 five-room suites; blue brick; white stone trimmings; garage to accommodate 4 automobiles; cost \$10,000.

ASSOCIATION AND FRATERNAL

Ala., Montgomery.—Y. M. C. A. is having plans prepared by Okel & Cooper, Architects,

Montgomery, for addition to Y. M. C. A. Bldg.; cost about \$30,000; details not determined.

BANK AND OFFICE

Ark., Marmaduke.—A. M. Hall will rebuild burned structure. (See Stores.)

Fla., Bradentown.—Geo. B. Wallace and partner will erect store and office building. (See Theaters.)

Ky., Louisville.—Fidelity & Columbia Trust Co. will alter building at 318 W. Market St.; cost \$4500.

Md., Baltimore.—Second National Bank, Chas. C. Homer, Prest., Broadway and Eastern Ave., contemplates improvements to banking house; tentative plans by Jno. Hiltz & Sons, 3 Clay St., Baltimore.

N. C., Greensboro.—Guilford County Commissioners contemplate erecting building for stores, courtrooms and offices. (See Court-houses.)

Tenn., Bristol.—Dominion National Bank is reported to expend \$25,000 to remodel building at State and Moore Sts.

Tenn., Maryville.—Bank of Blount county will erect bank, office and store building; 30x165 ft.; ordinary brick and stone construction; gravel or metal roof; heating not determined; electric lighting; architect not selected; cost about \$20,000. (Lately noted.)

Tex., Freeport.—Freeport National Bank lets contract about Feb. 1 to erect second story to building, 30x75 ft., for Freeport Texas Co. and Houston & Brazos Valley Ry.; fireproof; tar and gravel roof; steel staircase; W. A. Randle, Archt., Freeport. (Lately noted.)

Tex., Post.—First National Bank will erect bank building; 40x60 ft.; ordinary construction; tar and gravel roof; hot-water heating plant to cost \$1000; total cost, \$10,000; R. E. Gilmore, Archt., Post, may be addressed. (See Machinery Wanted.)

Tex., San Antonio.—Central Trust Co., J. O. Terrell, Prest., purchased site at Houston and Navarro Sts., 56x158 ft., and is reported to erect building; probably 8 stories or more.

Tex., Waco.—W. T. Watt receives bids until Jan. 22 to excavate for store, hotel and office building. (See Hotels.)

Va., Bassett.—Bank of Bassett is reported to remodel portion of building lately noted damaged by fire.

CHURCHES

D. C., Washington.—Mount Pleasant Methodist Episcopal Church South, Rev. F. J. Prettyman, pastor, is having plans prepared by Speiden & Speiden, 1403 New York Ave. N. W., Washington, for building on 16th St. N. W., near Lamont; brick; 70x52 ft.; will be built to serve as chapel when main structure is erected in future; cost \$25,000 and seat 500 people; basement for Sunday-school rooms, assembly hall and kitchen.

Ga., Atlanta.—Egleston Memorial M. E. Church, Rev. Clayton J. Yelsley, pastor, purchased site at Ponce de Leon and Piedmont Aves. and will erect building; erect auditorium at once to cost \$50,000 and later erect

remainder of structure to cost about \$50,000; will change name to Ponce de Leon Avenue M. E. Church.

Md., Baltimore.—Starr M. P. Church has revised plans by Owens & Slaco, 1605 Continental Bldg., Baltimore, for building on Garrison Ave.; Maryland limestone; seating capacity about 600; cost about \$50,000; bidders are C. C. Watts, 407 E. 25th St.; Cowan Bldg. Co., 105 W. Madison St.; Consolidated Engineering Co., 243 Calvert Bldg.; E. G. Turner, 15 E. Fayette St.; Andrew Knell, Jr., 215 St. Paul St.; Benj. F. Bennett Bldg. Co., 123 S. Howard St.; Edw. Watters, 509 N. Charles St., all of Baltimore, and Wise Granite & Construction Co., Richmond, Va., Jno. Elgin, Representative, Westminster, Md. (Previously mentioned.)

CITY AND COUNTY

N. C., Scotland Neck—Jail.—Halifax County Commrs. will erect jail building; cost \$20,000 to \$25,000.

S. C., Easley—City Hall.—City, J. T. Latham, Mayor, will erect city hall; 40x40 ft.; 2 offices; 3 iron cages and room for hose on first floor; auditorium to seat 300 or 400 on second; cost with site about \$4000.

COURTHOUSES

Ky., Lancaster.—Garrard County Commrs. accepted plans by Interstate Construction Co., Louisville, Ky., for improvements to courthouse for which \$15,000 bonds were voted. (Lately noted.)

N. C., Greensboro.—Guilford County Commissioners will ask Legislature for authority to issue bonds to erect courthouse, office and store building; contemplate building 8 or 10 stories; fireproof; about 80x140 ft.; cost \$150,000 to \$200,000; probably stores and county offices on ground floor, commercial offices on upper floors and courtrooms several stories from ground.

DWELLINGS

Ala., Birmingham.—Pelham Anderson is having plans prepared by Miller & Martin, Birmingham, for residence at Glenwood; 2 stories; tile roof; cost \$5000. (Lately noted.)

Ala., Birmingham.—Richard W. Massey is having plans prepared by Wm. Leslie Welton, Birmingham, to alter residence.

Ala., Decatur.—A. A. Jones will erect brick dwelling on Cherry St.

Ala., Piper.—Little Cahaba Coal Co. is having plans prepared by Wm. Leslie Welton, Birmingham, for 2 workmen's dwellings.

Ark., Little Rock.—Thomas W. Gannon, Boston, Mass., is reported to have purchased 15 lots through Lasker-Morris Bank & Trust Co. for erection of dwellings.

D. C., Washington.—Middaugh & Shannon, Woodward Bldg., will erect 7 dwellings at 420-32 5th St. N. W.; 2 stories; 20x32 ft.; brick; tin and slate roof; electric light; cost \$27,000; plans and construction by owners.

D. C., Washington.—Central Southern Presbyterian Church let contract to J. T. Kenyon, 1012 7th St. N. W., Washington, to erect manse and garage at 16th and Irving Sts.; art brick; cost \$10,000; Appleton P. Clark, Jr., Archt., 816 14th St. N. W., Washington.

D. C., Washington.—D. J. Dunigan will erect 10 two-story brick dwellings at 35-53 V St. N. W.; cost \$27,500; construction by owner.

D. C., Washington.—Hunter & Bell, Southern Bldg., Washington, are reported preparing plans for dwellings at Irving St. and Park Pl. to cost about \$20,000.

Fla., Clearwater.—Donald Alvord has plans by Lester Avery, Clearwater, Fla., for bungalow; tapestry brick; sleeping porch.

Fla., Jacksonville.—Charles Drayer will erect 2-story frame residence on Perry St.; cost \$4000.

Fla., South Jacksonville.—George Gill will rebuild residence near Point LaVista noted burned.

Fla., St. Petersburg.—J. P. Eldt, Elyria, O., is reported to erect dwelling at Roser Park; 2 stories; foundation begun.

Fla., Tampa.—C. E. Thomas will erect dwelling; cost about \$3000; A. H. Johnson, Archt., Tampa.

Ga., Atlanta.—M. L. Rauschenberg will erect 3 dwellings on Langhorne St. to cost \$750 and 2 on Elmira Pl. to cost \$6500; day labor.

Ga., Atlanta.—E. A. Hartsock will erect 2 five-room houses at 17-19 Maud St.; cost \$3000.

Ga., Atlanta.—J. J. Disoway is reported to erect residence in Ansley Park or Druid Hills.

Ga., Savannah.—D. C. Beasley will erect 2-story frame dwelling on W. 44th St.

La., New Orleans.—Creed Walker will erect 2-story frame dwelling on Nelson St.; cost \$2700.

La., New Orleans.—Mrs. C. E. Straus will erect 1-story frame dwelling at 722 Felicite St.; cost \$2739.

La., New Orleans.—C. Graffau will erect 1-story residence; cost \$3000.

La., New Orleans.—W. R. Gilbert will erect 2 one-story frame residences; cost \$6500.

La., New Orleans.—W. E. Benedict will erect single one-story residence; cost \$3700.

Md., Baltimore.—W. A. Tagg, 225 St. Paul St., will erect 11 dwellings on Smallwood St., near Clifton Ave.; 14x45 ft.; 2 stories; brick; sing roof; hot-air heat; gas and electric light; cost about \$12,000; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore; construction by owner.

Md., Baltimore.—Frank Novak, 744 Kenwood Ave., is having plans prepared by Callis & Callis, 2055 Kennedy Ave., Baltimore, for 8 dwellings on Linwood Ave., 14 and 15 ft. by 70 ft., and 8 porch-front dwellings on Curley St., 12 ft. 6 in. by 65 ft.; all structures of brick; hot-air heat; electric lights; cost \$22,000.

Md., Baltimore.—John Davis is having plans prepared by Thos. E. Sprinkel, 3340 Chestnut Ave., Baltimore, for dwelling at Melvale Heights; 28x36 ft.; slate roof; steam heat; gas and electric light; cost about \$3000; plans ready about Jan. 25.

Md., Baltimore.—Webb & White, 729 Tittle Bldg., are having plans prepared by O. B. Wight, 1008 Munsey Bldg., Baltimore, for 7 dwellings; 3 at Hill Top Park; 35x26 ft.; 2½ stories; cost \$3500 to \$5000 each; 4 at Alisa Terrace; 24x26 ft.; 2 stories; cost \$2500 to \$3500 each; all frame; stone and concrete foundations; slate roof; steam heat; gas and electric light; cement sidewalks; construction by owners.

Md., Baltimore.—Thos. E. Sprinkel, 3340 Chestnut Ave., Baltimore, prepared plans for 90 dwellings on Harford Rd. near Clifton Park; 14x40 ft.; cost about \$180,000; is preparing plans for 60 dwellings in same locality, to be ready about Mch. 1; 14x45 ft.; cost about \$180,000; construction to begin on all about Apr. 1; brick; slag roof; steam and hot-air heat; gas and electric light; construction by owner; owner's name withheld.

Md., Baltimore.—J. Kent Hubbard, 1820 W. Lanvale St., has plans by Stanislaus Russell, 2900 Clifton Ave., Baltimore, for 2 dwellings on Moreland Ave., near Baker St.; 21.5x36 ft.; brick; slate roof; steam heat; gas and electric light; cost about \$5000; construction by owner.

Md., Bradley Hills (not a postoffice).—Elace V. Simpson, 1419 Foxhall Rd., Washington, D. C., has plans by Spelden & Spelden, 1403 New York Ave. N. W., Washington, for 2 dwellings at Bradley Hills, Md.; one, shingle exterior; other, pebble dash; 1½ stories; 44x37 ft.; frame; slate roof; hot-water heat; electric light; construction by owner.

Mo., St. Louis.—A. Degenhardt will erect 2-story dwelling at 6123 Grand King's Highway; cost \$4200; construction by owner.

Mo., St. Louis.—Emil F. Fendler will erect 3 two-story dwellings at 5007-11-19 Murdock St.; cost \$3100; construction by owner.

Mo., St. Louis.—J. E. Reeves will erect bungalow in Chelsea.

Mo., St. Louis.—Rannels Investment Co. will erect 2-story and two 1-story dwellings on N. Goodfellow St.; total cost \$8000; construction by owner.

Okla., Tulsa.—Fannie A. Wate will erect 2-story frame dwelling on S. Denver St.; cost \$5000.

Okla., Tulsa.—G. B. Stotts will erect 2-story frame dwelling on S. Cheyenne St.; cost \$4000.

Okla., Tulsa.—R. M. Purdy will erect 1-story frame dwelling at 1601 S. Elwood Ave.; cost \$2850.

S. C., Charleston.—Mary Garfinkle will erect store and dwelling. (See Stores.)

S. C., Columbia.—J. S. Middleton will erect frame residence; cost \$6000; Wilson & Sompayrac, Archts., Columbia.

S. C., Columbia.—Dr. C. F. Williams will rebuild burned dwelling; J. B. Urquhart, Archt., Columbia.

S. C., Columbia.—R. J. Alderman will rebuild burned dwelling; Geo. E. Lafaye, Archt., Columbia.

Tenn., Knoxville.—A. A. Chable has plans by R. F. Graf & Sons, Knoxville, for dwelling on W. Hill Ave.; colonial type; 10 rooms; cost about \$12,000; contract soon let.

Tenn., Knoxville.—A. J. Binzell has plans by R. F. Graf & Sons, Knoxville, for dwelling on W. Cumberland St.; bungalow type; 8 rooms; cost about \$5500; contract soon let.

Tenn., Knoxville.—Dr. C. B. Jones is having plans prepared by R. F. Graf & Sons, Knoxville, for dwelling; colonial type; 2 stories; 8 rooms; cost about \$12,000.

Tex., Dallas.—Lange Wharton will erect 2-story 8-room residence at 1700 Bowser St.; cost \$3000.

Tex., Dallas.—R. B. Nelson will erect 9-room 2-story brick building at 2321 Forest St.; cost \$7500.

Tex., El Paso.—J. W. Bischoff will erect dwelling. (See Apartment-Houses.)

Tex., Fort Worth.—A. C. Williams will erect dwelling at 1623 W. 7th St.; cost \$3000.

Tex., Houston.—J. H. Blair will erect 5-room residence at Dumble St. and Telephone Rd.; cost \$2800.

Va., Norfolk.—Z. B. Capps will erect two double brick 2-story dwellings on Rowland Ave.; cost \$3900.

Va., Richmond.—Sarah M. Adelanaki will erect store and dwelling. (See Stores.)

Va., Richmond.—Charles Kahl will erect 2-story brick dwelling on Tabb Rd., between Duval and Wallace Sts.; cost \$4250.

W. Va., Huntington.—D. L. Barlow, 824 13th Ave., will erect residence; 8 rooms and attic; brick; tile or slate roof; gas heating; electric lighting; cost \$4500; L. J. Dean, Archt., Huntington; construction by owner; lately noted; address Mr. Barlow. (See Machinery Wanted.)

W. Va., Wheeling.—Jos. Selfert will erect 8-room residence at 3625 Chapline St.; construction by owner; Jos. Selfert, Sr., will alter and raze house at 3627 Chapline St.

GOVERNMENT AND STATE

Fla., Jacksonville.—Atlantic National Bank of Jacksonville will erect building for post-office substation; about 40x105 ft.; other details not determined. (Lately noted.)

Ga., Savannah.—Postoffice.—Marion Lucas, custodian U. S. Postoffice, receives bids until Feb. 2 for entrance work on postoffice according to drawings and specifications, copies of which are obtainable upon application.

La., New Orleans.—R. H. von Ezdorf, Custodian, U. S. Marine Hospital, receives bids until Jan. 23 for repairs in accordance with specifications, copies of which may be obtained upon application.

N. C., Kinston.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., opened bids to erect postoffice; Westchester Engineering Co., White Plains, N. Y., is lowest bidder at \$51,500 for limestone and \$56,000 for sandstone construction; 1 story and basement; 4650 sq. ft. ground area; fireproof; stone facing; composition roof. (Lately noted.)

Va., Fort Myer—Barrack, etc.—Constructing Quartermaster receives bids in triplicate until Feb. 11 to construct Quartermaster Corps barrack and 3 sets non-commissioned officers' quarters; information on application.

HOSPITALS, SANITARIUMS, ETC.

Fla., Clearwater.—West Coast Hospital opened bids to erect building according to plans by Lester Avery, Clearwater; brick or stucco; vacuum cleaning system; electric signal system; elevators; 72 ft. 8 in. by 45 ft. 3 in.; felt asphalt roofing; J. E. Kennedy, Tampa, is lowest bidder at \$21,988 without heating plant, and Chas. W. Hirsch, Clearwater, lowest bidder at \$22,497 with heating plant. (Lately noted.)

La., New Orleans.—R. H. von Ezdorf, Custodian, U. S. Marine Hospital, receives bids until Jan. 23 for repairs. (See Government and State.)

Mo., Kansas City.—St. Joseph's Hospital will probably be ready in about a month to take estimates to erect hospital building and chapel wing; fireproof; steel and concrete; brick, with terra-cotta facing; 6 stories; accommodations for 250 patients; chapel; 4 or 5 stories; connected to main building by tunnel; cost about \$400,000; Wilder & Wight, Archts., First National Bank Bldg., Kansas City. (Previously noted.)

Va., Charlottesville.—Board of Visitors and Rector of University of Virginia will expend \$50,000 to erect addition to hospital.

Va., University.—University of Virginia will erect wing to hospital; ordinary construction; slate roof; hot-water heat; electric lighting; electric elevators; architect not selected. (Lately noted.)

HOTELS

Fla., St. Augustine.—A. V. Monson is reported to erect addition to New Monson House; 54 rooms; tile roof; probably open bids in April and begin construction in May; Fred Hendricks, architect, St. Augustine.

Ky., Dawson Springs.—H. W. Russell contemplates erecting hotel.

Ky., Williamsburg.—S. E. Mahan is interested in erection of hotel; hot and cold water in all rooms; steam heat; electric lights; \$25,000 subscribed.

Mo., Kansas City.—Fred Kysell is having plans prepared by F. H. Michaels, Kansas City, for New Blossom House; 3 or 5 stories; A. H. Mack and J. H. Payne, lessees.

Tenn., Camden.—W. A. Lashlee contemplates erecting brick hotel to replace structure reported burned.

Tex., Waco.—W. T. Watt receives bids until Jan. 22 to excavate and remove about 10,000 cu. yds. earth for building at 5th and Franklin Sts.; plans and specifications obtainable from Milton W. Scott & Co., Archts., Waco; structure 165x185 ft.; lighting plant in basement; cost about \$400,000; for hotel, stores and offices; previously noted. (See Machinery Wanted.)

Va., Abingdon.—C. T. Alexander, Chattanooga, leased Hotel Abingdon and is reported having plans prepared to remodel building at cost of several thousand dollars.

MISCELLANEOUS

Ark., Marmaduke—Postoffice.—A. M. Hall will rebuild burned structure. (See Stores.)

D. C., Washington.—Memorial.—Woman's Department, National Civic Federation, District of Columbia Section, Mrs. Archibald Hopkins, Chrmn., 704 Union Trust Bldg., contemplates erecting memorial to Mrs. Woodrow Wilson; to take form of block of model houses and to include municipal warehouse and day home for children; estimated cost \$348,000; Schenck & Mead, Archts., 105 W. 40th St., New York. (Noted in November.)

Fla., Ft. Myer—Clubhouse.—Ft. Myer Improvement Co. (present address, St. Petersburg, Fla.), W. L. Sontag, Pres., will erect clubhouse. (See Land Developments.)

La., New Orleans.—Studio.—L. M. Holmes will erect frame building at 1347 Moss St. for film studio; cost \$3200.

Miss., Jackson—Home.—Old Men's Home, Rev. W. G. Francis, Secy., 327 E. President St., Jackson, will erect building on Clinton Rd.; 78x144 ft.; brick; 100 rooms; sheet-iron construction; probably steam heat; elevator; cost \$20,000; lately noted. (See Machinery Wanted.)

Va., Norfolk—Home.—Turney Home for Boys has plans by Neff & Thompson, Norfolk, for addition to home; 2 stories; brick; 24x43 ft. 1 in.; for dining-room, kitchen, dormitory, etc., bids opened Jan. 19.

Va., Petersburg—Memorial.—P. H. Drewry, Leigh Bldg., is interested in erection of memorial Building to Soldiers of Petersburg; accommodate about 750; fireproof; minimum cost \$10,000; other details not determined.

RAILWAY STATIONS, SHEDS, ETC.

Tex., Dallas.—North Texas Traction Co. (controlled by Stone & Webster Engineering Corporation, Boston, Mass.) is reported to have completed financial arrangements to erect terminal station at Jackson and Browder Sts. (Previously noted to erect 9-story structure with train sheds 200x270 ft., etc., at cost of \$2,000,000.)

Va., Richmond.—Richmond, Fredericksburg & Potomac R. R. Co. abandoned for present erection of passenger station. (Previously noted.)

SCHOOLS

Ala., Huntsville.—City Commissioners passed ordinance providing election February 15 on \$40,000 bonds to erect high school.

Ark., Searcy.—Galloway College, J. M. Williams, Pres., indefinitely postponed erection of administration building. (Previously noted.)

Fla., Bartow.—Summerlin Institute will erect gymnasium; 40x50 ft.; 2 stories.

Fla., Pinellas Park.—Pinellas Park School Dist. Trustees have plans by Herman E. Wendell, Gulfport, Fla., for lately noted school; 68x68 ft.; 1½-in. brick walls; asbestos shingle roof; electric lights from city plant; probably let contract about Jan. 25; cost \$6000; furniture and blackboards supplied by County Board of Education; architect may be addressed. (See Machinery Wanted.)

Fla., Raiford.—School Board, Starke, Fla., receives bids until Feb. 1 to erect school building; cost about \$8000; probably tile

roof; E. C. Hasford & Co., Archts., Eastman, Ga. (Lately noted.)

Fla., West Palm Beach.—Dept. of Public Instruction of West Palm Beach County sold \$25,000 bonds to erect school in Dist. No. 4 and \$10,000 bonds to erect school in Dist. No. 7; H. W. Lewis, Supt. Public Instruction.

Ky., Louisville.—Board of Education is having plans prepared by J. E. Henry, 8th and Chestnut Sts., Louisville, for school at Wiben and Sills Aves.; 400,000 cu. ft.; 2 stories and basement; 8 classrooms, auditorium, library, etc.; composition roof, J-M or Carey; cost \$65,000; split system of heating, \$12,000; bids opened in about 3 months. (Lately noted.)

La., Fenton.—Jefferson Davis Parish School Board, Jennings, La., receives bids until Jan. 26 to erect 2-story brick school; plans and specifications at office of Supt. at Jennings and A. H. Humphrey, Archt., Room 5, Elloch Bldg., Lake Charles, La.

La., Glenmora.—Rapides Parish School Directors, Alexandria, La., meet Jan. 27 to consider bids for sale of \$25,000 bonds to erect high school previously noted; also consider bids for \$30,000 and \$15,000 bonds to erect high schools in Poland and Tioga school districts, respectively.

La., Poland (not a P. O.).—See La., Glenmora.

La., Tioga.—See La., Glenmora.

Miss., McLaurin.—McLaurin School Dist., H. Gillis, Clerk of Suprvs., rejected all bids to erect school; 2 stories; 60x100 ft.; fireproof; slate roof; cost about \$6000; R. E. Lee, Archt., Hattiesburg, Miss. (Lately noted.)

Miss., Washington.—Jefferson Military College is reported to erect brick or stone dormitory to replace structure noted burned at loss of \$5000.

N. C., Wadesboro.—Rev. Geo. Atkinson is reported to have acquired Rocky River Springs property and to reconstruct buildings for boys and girls' industrial school.

Tenn., Camden.—High School Building Comm. will let contract about Jan. 20 to erect school building; 57.6x77 ft.; 2 stories; ordinary brick construction; composition roof; low-pressure steam heat; electric wiring; cost \$20,000; L. M. Weathers Co., Archt., Memphis, Tenn.; address Joe F. Odle, Mayor. (Lately reported to have let contract.)

Tenn., Chattanooga.—Hamilton County Court authorized \$23,000 bond issue to supplement \$200,000 issue previously voted to erect and repair 31 schools. Address County Commrs. (Previously noted.)

Tex., Lockney.—Lockney Ind. School Dist. is having plans prepared by Berry & Kaufman, Amarillo, Tex., for school building to replace burned structure; 88x97 ft.; 2 stories; ordinary brick construction; gravel roof; direct steam heat and hot-air ventilators; electric wiring; cost about \$16,000; probably open bids Feb. 10; construction to begin about Mch. 10. Address Wm. McGee, Pres. of School Board. (Lately noted.)

Va., Petersburg.—Board of Aldermen voted to issue \$100,000 bonds to erect 3 schools for colored children.

Va., Blacksburg.—Town votes Feb. 23 on \$4000 bonds to erect school and \$4000 bonds as pro rata share toward constructing septic tank in connection with Virginia Polytechnic Institute. Address Town Clerk.

STORES

Ark., Little Rock.—M. B. Sanders of Sanders Plumbing Co., 208 Louisiana St., is having plans prepared for building containing 2 stories; front, 25x140 ft.

Ark., Marmaduke.—A. M. Hall will rebuild burned structure for store, bank and post-office; 3 rooms; each 25x70 ft.; day labor. (Lately noted burned.)

D. C., Washington.—M. M. Stern has plans by N. R. Grimm, 606-7 Bond Bldg., Washington, to remodel building at 7th and F Sts. N. W.; white tile and marble finish; metal ceilings; plumbing; cost about \$3000.

D. C., Washington.—Hub Furniture Co., 7th and D Sts., acquired structure at 313-15 7th St. and is having plans prepared by Rich & Fitz Simons, Bond Bldg., Washington, for improvements; will combine with present structure, construct front, plate-glass show windows, double-door vestibule, etc.; provide 14,000 sq. ft. additional floor space.

D. C., Washington.—H. Abramson has plans by Appleton P. Clark, Jr., 816 14th St., Washington, for store and apartment-house at 7th and L Sts. N. W.; 2 stories and cellar; tapestry brick; limestone trimmings; cost \$25,000.

Fla., Bradentown.—Geo. B. Wallace and partner will erect store and office building. (See Theaters.)

Fla., Jacksonville.—Stockton Broome Co. is considering erection of three buildings on Adams St. between Laura and Hogan Sts.; details not decided.

Ga., Macon.—Armour & Co., M. B. Medlock, local manager, receive bids in about a week to erect building in rear of Hotel Macon; reinforced concrete; fireproof; tile finish; cost about \$50,000; Macon contractors estimating.

La., New Orleans.—Poydras Realty Co. will erect 2-story brick-and-frame store building on Napoleon Ave.; cost \$3500.

Md., Baltimore.—Bowen & King, 117 N. Liberty St., are having plans prepared by Theo. Wells Pietsch, 1210 American Bldg., Baltimore, to remodel store at 405 N. Charles St.; marble front; new interior fixtures. (Lately noted.)

Md., Hagerstown.—Leiter Bros. will erect concrete and steel business building; also remodel 4-story structure adjoining.

Mo., West Plains.—C. T. Aid has plans by T. Eldson Mitchell, 303½ Main St., Jonesboro, Ark., for store building; 60x140 ft.; ordinary construction; Barrett's specification roofing; steam heat; freight elevator; cost \$30,000; date of opening bids not determined. (Lately noted.)

N. C., Charlotte.—Dr. E. Reid Russell, Asheville, N. C., will rebuild structure at 18 W. 5th St., burned at loss of \$75,000. (Lately noted under N. C., Asheville.)

N. C., Greensboro.—Guilford County Commrs. contemplate erecting building for stores, courtrooms and offices. (See Courthouses.)

S. C., Charleston.—Mary Garfinkle will erect store and dwelling at 100 King St.; cost \$2900.

Tenn., Knoxville.—T. E. Burns Co. has plans by A. B. Baumann, Knoxville, for improvements to building at Wall and Market Sts.; 50x137 ft.; 4 stories and basement; tin roofing; steam heat; electric lights; electric elevator; excavating, underpinning and similar work to be done at once at cost of \$4000; other improvements during year. (Lately noted.)

Tex., El Paso.—W. C. Shaw will add story to building 1208 N. Oregon St.; cost \$3000.

Tex., Fort Worth.—Gentzberg & Cohen will erect store building at 507 Elizabeth St.; cost \$5000.

Tex., Houston.—Mrs. Pauline Wolff receives bids through Finger & Bailey, Archts., Houston, until Jan. 23 to erect 3-story reinforced concrete store building at Main St. and Congress Ave. (Lately noted.)

Tex., Waco.—W. T. Watt receives bids until Jan. 22 for excavation for store, hotel and office building. (See Hotels.)

Va., Norfolk.—Higgins Land Co. opens bids Jan. 26 in office of Neff & Thompson, Archts., Norfolk, to erect store building on Granby St., between Bute and York Sts.; 1 story, with mezzanine; 60.4x181.5 ft.; brick and

concrete trimmed with terra-cotta; provision for 7 stores.

Va., Richmond.—Sarah M. Adelski will erect detached 2-story brick store and dwelling on Meadow St.; cost \$3000.

Va., Richmond.—Mrs. Louisa C. Williams will erect frame store at 1214 Leigh St.; cost \$4500.

THEATERS

Fla., Bradentown.—Geo. B. Wallace will erect moving-picture theater; 2 stories; brick; 35x100 ft.; balcony; seating capacity 600; second floor for offices or apartments; upon completion of theater Mr. Wallace and partner will erect 2-story brick building separated from theater by 5-ft. court; 50x100 ft.; first floor for stores, second for offices.

Fla., Jacksonville.—H. S. Walker, 403 Main St., has plans by W. Mulford Marsh, 403 Main St., Jacksonville, for theater at Jefferson and Ashley Sts.; 70x105 ft.; semi-fireproof; asbestos roofing; electric lights; cost about \$25,000; construction by owner and he may be addressed. (Lately noted.)

Md., Baltimore.—Gottfried Helmig is having plans revised by Stanislaus Russell, 2900 Clifton Ave., Baltimore, for motion-picture theater on Presman St.; 40x110 ft.; semi-fireproof; slag roof; hot-water heat; electric light; concrete sidewalks and vault lights; cost about \$8000; plans ready about Feb. 1. (Previously noted.)

Mo., Springfield.—Grubel Bros., Kansas City, Mo., are reported to erect \$80,000 theater.

S. C., Charleston.—Pastime Amusement Co. will erect theater on King St.; seating capacity 1600; fireproof; cost \$25,000; Albert Sottile may be addressed.

Tex., Austin.—Nalle estate (Ernest Nalle) lets contract in about 10 days to erect opera-house on Congress Ave.; 75x100 ft.; reinforced concrete; tile roof; cement sidewalks; cost \$100,000.

Tex., Orange.—Dr. J. J. Depraslin and H. R. Kittern of Lake Charles, La., leased store building in Holland Block; will erect 20-ft. addition, construct stage, etc., at cost of \$6000.

Va., Danville.—Piedmont Amusement Co., R. D. Craver, Gen. Mgr., temporarily at Danville, will erect moving-picture theater to cost about \$8000.

WAREHOUSES

Ala., Mobile.—Turner Terminal Co., Horace Turner, Pres., will build cotton warehouses. (See Miscellaneous Construction and Cotton Compresses and Gins.)

Md., Baltimore.—Baltimore Gas Appliance & Mfg. Co., Bayard and Hamburg Sts., let contract to erect plant addition, also warehouse and office. (See Miscellaneous Factories.)

Tex., Austin.—H. A. Wroe is interested in erection of cotton warehouse; galvanized-iron roof; slides and ends open; capacity 10,000 bales; cost \$10,000.

Tex., Port Arthur.—Texas Company, Houston, Tex., will erect 2 additional concrete warehouses for storing case oil. (See Miscellaneous Construction.)

W. Va., Moundsville.—Gatts & Gray will erect addition to warehouse.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Md., Hagerstown.—Potomac Real Estate Co. opens bids about Mch. 1 to erect apartment-house at 11 N. Johnathan St.; 39x95 ft.; 5 stories; slag roof; electric and gas lighting; vault lights, 39x8 ft.; cost \$20,000; heating plant, \$2500; push-button elevator, \$2500; Harry E. Yessler, Archt., Hagerstown; Geo. B. McWolf, Hagerstown, probable contractor. Address company. (Lately noted.)

Mo., St. Louis.—Pierre Well let contract to H. A. Barnett, St. Louis, to erect 2-story tenement-house at 404 DeTonty St.; cost \$4600.

ASSOCIATION AND FRATERNAL

Ark., Texarkana.—Publishing Comm. of Presbyterian Church let contract to remodel building for store, lodge and offices. (See Stores.)

W. Va., Charleston.—A. F. & A. M. let contract at approximately \$25,000 to J. E. Moss Iron Works, Wheeling, W. Va., for about 300 tons of structural steel for Masonic Temple; H. Rus Warne and David Dick, Archts., both of Charleston. (Lately noted.)

BANK AND OFFICE

Ark., Texarkana.—Publishing Comm. of Presbyterian Church let contract to remodel

building for store, lodge and offices. (See Stores.)

Ga., Gainesville.—J. W. W. Simmons let contract to Levi Prater, Gainesville, to erect bank building to be occupied by Citizens' Bank, C. L. Newton, Cash.; marble front.

La., Gretna.—Mrs. Snyppe let contract to erect postoffice and office building. (See Government and State.)

Tenn., Chattanooga.—Nashville, Chattanooga & St. Louis Ry., H. McDonald, Ch. Engr., Nashville, let contract to P. O. Rogers & Son, Chattanooga, to erect office building at Market and 9th Sts.; 41.6 ft. on Market St.; 2 stories; terra-cotta construction; interior finished in mahogany; cost \$7000; E. E. Dougherty, Archt., Atlanta. (Previously noted.)

CHURCHES

Tex., San Marcos.—Catholic church let contract to Walsh & Burney, San Antonio, to erect building at N. Guadalupe and Woods Sts.; cost \$30,000.

CITY AND COUNTY

Tex., Galveston.—City Hall.—City let contract at \$3180 to Max Levy, Galveston, for wiring city hall and auditorium, for which general contract was let to Gross Construction Co., Waco, Tex.; plans by C. D. Hill

& Co., Dallas, call for 4-story and basement structure; 130x275 ft.; fireproof; tile and gravel roof; cost \$225,000. (Lately noted.)

COURTHOUSES

Fla., Fort Myers.—F. P. Helfner, general contractor to erect Lee County Courthouse, let following subcontracts: Granite work, Stone Mountain Co-operation Co., Stone Mountain, Ga.; soft stone, Hill R. Huffman, Third National Bank Bldg., Atlanta; mill work, Duval Lumber Co., Jacksonville; cast iron and steel, Price-Evans Co., Chattanooga; reinforcing steel for concrete, John F. Glenn & Co., Grant Bldg., Atlanta; reported total cost \$100,000; F. J. Kennard, Archt., Tampa, Fla. (Lately noted.)

Ga., Preston.—Webster County Commrs. let contract to Shields, Gelse & Rawlings, Dawson, Ga., to erect courthouse; 2 stories; brick; stone trimmings; fireproof roof, record-room and floors; steel furniture; vault; cost \$15,000 to \$20,000; T. F. Lockwood, Archt., Columbus, Ga. (Lately noted.)

DWELLINGS

Ala., Birmingham.—W. T. Moughon let contract to C. W. Brown, 411 S. 57th St., Birmingham, to erect dwelling; 40x40 ft.; 2 stories; frame; tile roof; cost \$6000; steam heat, \$200; electric lighting; W. T. Warren, Archt., Birmingham. (Lately noted.)

Ark., Little Rock.—W. E. Owens let contract to S. E. Higgins, Little Rock, to erect 1-story cottage at 3005 Arch St.; cost \$3500.

D. C., Washington.—T. A. Jameson, 61 Rhode Island Ave. N. W., has plans by L. T. Williams for 2 dwellings at 929-31 7th St. N. E.; 16.6x51 ft.; 2 stories; brick; tin roof; hot-water heat; electric light; cost \$5000; construction by owner.

Fla., Clearwater.—C. C. Paine let contract to Eichelberger & Dalby, Clearwater, to erect dwelling in Harbor Oaks; Lester Avery, Archt., Clearwater.

Fla., Clearwater.—Sewell Ford let contract to Eichelberger & Dalby, Clearwater, to erect residence in Harbor Oaks; 3 stories; Lester Avery, Archt., Clearwater. (Lately noted.)

Fla., Lake Wales.—B. F. Bullock, Bartow, Fla., let contract to Logan & Townsend, Lakeland, Fla., to erect dwelling; 2 stories; brick; tile roof; hardwood floors; cost \$10,000; Bonfoey & Elliott, Archts., Tampa.

Fla., St. Petersburg.—C. M. Roser let contract to Halsema Bros., St. Petersburg, to erect residence at 6th St. and 10th Ave.; cypress shingle roof; cost \$4000; S. T. McClane, Archt., St. Petersburg. (Lately noted.)

Ga., Augusta.—Summersville Academy let contract to J. W. Silbert, Augusta, to erect superintendent's residence at Katherine and Cummings Sts.; furnace heat; cost \$3500.

Ky., Louisville.—O. J. Schoo let contract to Frey Planning Mill Co., Louisville, to erect residence at 2045 Eastern Parkway; 29 ft. x 31 ft. 8 in.; mill construction; tin roof; cost \$3500; hot-air heating plant, \$150; owner may be addressed. (Lately noted.)

Md., Baltimore.—Wm. P. Hayden has plans by Robt. Benson Turner, 706 Union Trust Bldg., Baltimore, and let contract to Percy P. Turner, 706 Union Trust Bldg., Baltimore, to erect dwelling at Melvale Heights; 23x34 ft.; 1½ stories; hollow tile; shingle roof; hot-air heat; gas and electric light; cost \$28,000.

Mo., St. Louis.—C. J. and F. E. Briner let contract to M. Eyssell Construction Co. to erect warehouse on Morgan St.; cost \$16,000.

Mo., St. Louis.—H. C. Howard let contract to Bush-Byrns Co. to erect 2-story dwelling on N. Taylor St.; cost \$4000.

Mo., St. Louis.—Mrs. E. J. Allen let contract to E. Hartman to erect 2-story dwelling at 3541 Giles St.; cost \$3800.

S. C., Georgetown.—W. H. Yawkey, New York city, let contract to T. W. Brightman, Georgetown, to erect residence for winter lodge at 417 Front St.; 67x94 ft.; ordinary construction; shingle roof; cost \$5000. (Lately noted.)

Va., Richmond.—B. H. Melton let contract to S. G. Stowe, 210 S. Cherry St., Richmond, to erect 8 dwellings on Floyd Ave.; 24x40 ft.; brick; tin roof; hot-water heating plant to cost \$350; total cost \$27,500.

Tex., San Antonio.—Clyde V. Lancaster let contract to Chas. L. Eckles, 1814 Buena Vista St., San Antonio, to erect dwelling; 38x70 ft.; frame; asphalt shingles; cost \$3500; Altee B. Ayres, Archt., San Antonio; let contracts to Wright Bros. at \$132.50 for electric lighting; Lieber Bros., \$300, plumbing; Boubel Bros., \$307, painting; Weber & Son, \$200, brick; all of San Antonio. (Lately noted.)

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Va., Norfolk.—F. E. Horton, Manteo Apartments, let contract to Griffin Bros., Arcade Bldg., to erect dwelling in Colonial Pl.; 2 stories and basement; 7 rooms and bath; hot-water heat; 37x24 ft.; ordinary construction; slate roof; Benton & Lancaster, Norfolk, contractors for heating and plumbing; all subcontracts let; cost \$4000.

Va., Richmond.—J. L. Walthour Bro. let contract to J. L. Walthour, 1105 Porter St., to erect dwelling in S. Richmond; 23x44.6 ft.; frame; tin roof; grates; cost \$7000; J. T. Sinner, Archt., Miller Mfg. Co., Richmond; contract to J. H. Chappell & Bro., Richmond, for plumbing and heating; address Mr. Walthour.

GOVERNMENT AND STATE

Ky., Georgetown.—Postoffice.—Treasury Department, Oscar Wenderoth, Supervising Architect, Washington, D. C., let contract at \$65,128 to Geo. Becking, Chattanooga, Tenn., to erect postoffice; 2 stories and basement; ground area 4800 sq. ft.; fireproof; stone facing; composition roof. (Mr. Becking previously noted as lowest bidder.)

Ky., Middlesboro.—Postoffice.—Treasury Department, Oscar Wenderoth, Supervising Architect, Washington, D. C., let contract to John G. Unkefer & Co., Minerva, O., to erect postoffice; 2 stories and basement; 5000 sq. ft. ground area; stone facing; composition roof; cost about \$62,000. (Lately noted.)

La., Gretna.—Postoffice.—Mrs. Snyp is reported to have let contract to A. Roupich to erect building for postoffice and offices; 2 stories; concrete. (Lately noted.)

Miss., Canton.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Architect, let contract to Algernon Blair, Montgomery, Ala., at \$40,650 to erect postoffice; 2 stories and basement; 3600 sq. ft. ground area; stone and stucco facing; fireproof; composition roof; steam heat; construction to begin Apr. 1. (Lately noted.)

Tenn., Cookeville.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Architect, Washington, D. C., let contract to W. H. Fissell & Co., 1133 Broadway, New York, to erect postoffice; 88.3x56 ft.; 3 stories and basement; fireproof; slate roof; cost \$110,000; semi-indirect steam heat, \$3000; electric and gas lighting, about \$1500; cement sidewalks, \$125; general contractors desire sub-bids on all branches, which will total about \$30,000; previously noted. (See Machinery Wanted.)

HOTELS

Tenn., Tiptonville.—A. E. Markham has plans by and let contract to C. E. Wynne, Tiptonville, to erect hotel; frame; wood shingle roof; hot-water heat; electric lights; concrete sidewalks; 20 rooms; cost \$5500. Address Mr. Wynne. (See Machinery Wanted.)

MISCELLANEOUS

D. C., Washington.—Home.—Stoddard Baptist Home has plans by R. I. Vaughn, 506 T St. N. W., Washington, and let contract to W. A. Kemmel, 511 Evans Bldg., Washington, to erect building at 302 Bryant St. N. W.; 2 stories; 40x50 ft.; brick; slag roof; electric light; cost \$12,231.

Md., Texas.—Alms-house.—County Commrs. let contract to Cogswell-Koether Co., 406 Park Ave., Baltimore, to repair fire damage to alms-house; cost \$10,975.

SCHOOLS

Ala., Boyles, P. O. Birmingham.—Jefferson County Board of Education let contract at \$33,234 to Jesse L. Burus to erect high school; 2 units, 50x100 ft.; 2 stories and basement; composition roof; fan-blast system of heat; Wm. Leslie Welton, Archt., Birmingham. (Lately noted.)

Ala., Montevallo.—R. V. Labarre, 525 Jefferson County Bank Bldg., Birmingham, general contractor to erect domestic-science hall for Alabama Girls' Technical Institute, let following subcontracts: Iron and steel and reinforcing material, Ingalls Iron Works Co., Birmingham; mill work, Enochs Lumber & Mfg. Co., Jackson, Miss.; plumbing, heating, roofing and metal work, Michael Supply & Roofing Co., Talladega, Ala.; electric wiring, Wilcox Electric Co., Birmingham; cut stone, Reed Bros. Stone Co., Birmingham; terra-cotta, New York Architectural Terra-Cotta Co., New York; fireproofing, North Birmingham Fire-Brick & Proofing Co., North Birmingham, Ala.; common and face brick, Brick Selling Co., Birmingham; sand, gravel and cement, Kirkpatrick Sand & Cement Co., Birmingham; lumber and flooring, George Korell, Montevallo; excavation and hauling, Wittchen Coal & Transfer Co., Birmingham; plans by W. T. Warren, Empire Bldg.,

Birmingham, call for structure 146x84 ft.; 3 stories; fireproof; reinforced concrete; tar and gravel roof; Warren & Webster heating plant; lighting by conduit system; freight elevator; cost \$60,000 without mechanical equipment. (Lately noted.)

Fla., Labelle.—Board of Public Instruction of Dist. No. 5, Lee county, W. J. Odom, Secy., Fort Myers, Fla., let contract to Canbous & Parker, Tampa, to erect school; brick; composition roof; cost \$18,000; W. L. Redditt, Archt., Tampa. (Lately noted.)

Fla., Manatee.—Manatee County Commra. let following subcontracts to erect school, for which W. A. Jester, Dade City, Fla., has general contract at \$16,677: Installing heating plant, Peck-Hammond Co., \$1496; tile roofing, Griggs Metal Co., \$833.35; plumbing, Cooper-Nail Co., \$1240; fire-escapes, Georgia Supply Co., Tampa, Fla., and Savannah, Ga., \$340; electric wiring, Roy A. Parker, \$198; painting, J. Longendyke, \$635; Willis R. Biggers, Archt., Tampa. (Previously noted.)

Ga., Augusta.—Summersville Academy let contract to erect superintendent's residence. (See Dwellings.)

Ga., Dallas.—City let contracts to erect school as follows: General contract at \$11,928 to J. W. Stout & Co., Sanford, N. C.; face brick, Legg Brick Co., Calhoun, Ga.; direct indirect steam-heating system at \$1240 to Kirk Heating & Plumbing Co., Dublin, Ga.; electrical work at \$345 to Dallas Electric Co., Dallas; Sayre & Baldwin, Archts., Anderson, S. C. (Previously noted.)

Ky., Louisville.—Board of Education let contract to Geo. Alt & Co., Louisville, to remodel school on 6th St. between Chestnut and Walnut Sts., providing 13 rooms; fireproof and ordinary construction; composition roof; city lighting; cost \$27,000; contract for direct steam heating plant to W. C. Gibson & Co., Louisville, at \$2760; J. Earl Henry, Archt., 8th and Chestnut Sts., Louisville. (Lately noted.)

La., Vivian.—Caddo Parish School Board, Shreveport, La., let contract at \$56,462 to Jones & Harrington, Hot Springs, Ark., to erect 2-story brick school building; Edward F. Neild, Archt., Shreveport. (Lately noted.)

N. C., Raleigh.—Raleigh Township School Comm. let contract to erect 3 rooms as first unit of 10-room structure at Glenwood Ave. and Peace St.; 2 stories; red brick; later add other rooms; total cost about \$25,000; Frank B. Simpson, Archt., Raleigh; construction begun. (Previously noted.)

Tenn., Chattanooga.—County Board of Education let contract to T. S. Moudy & Co., Chattanooga, at \$2620 to erect building and install plumbing system at Hill City school; J. D. Alsop, Archt., Chattanooga.

Tex., El Paso.—Trustees of Independent School Dist. of El Paso let contract to Jos. E. Morgan, 209 N. Kansas St., El Paso, to erect lately-noted high school; reinforced concrete construction; concrete and Barrett specification roofing; hot-blast steam heating plant to cost \$90,000; total cost without mechanical equipment \$500,000; Trost & Trost, Archts., El Paso. (See Machinery Wanted.)

W. Va., Athens.—State Board of Control let contract at approximately \$12,000 to J. E. Moss Iron Works, Wheeling, W. Va., for about 150 tons structural steel, fireproofing, suspended ceilings and ornamental-iron work for State Normal School; H. Rus Warne, Charleston, W. Va., Archt.; Carter & Massey, Gen. Contrs., Bluefield, W. Va. (Lately noted.)

W. Va., Charleston.—Board of Education let contracts for heating and ventilating for high school to Columbus (O.) Heating & Ventilating Co., and for plumbing and vacuum piping to West Virginia Heating & Plumbing Co., Charleston; Roche-Bruner Building Co., Gen. Contr., Cincinnati; Frank L. Packard, Archt., Columbus, O. (Lately noted.)

STORES

Ala., Birmingham.—Alex. Kontos let contract to C. W. Hadnott, 1110 7th Ave., Birmingham, to remodel building for theater, store and offices; 50x108 ft.; 2 stories; mill construction; tar and gravel roof; city steam heat; city electric light; cost \$5800; Joy-Marriott Co., Archt., Jefferson County Bank Bldg., Birmingham. (Lately noted.)

Ark., Amity.—Ward Bros. let contract to Morris Construction Co., Amity, to erect business building on Main St.; 90x80 ft.; brick; concrete foundation; plch and gravel roof; cost \$9000; M. C. Morris, Archt., Amity.

Ark., Texarkana.—Publishing Comm. of Presbyterian Church let contract to Lee

Quillin and T. L. Bentley, both of Texarkana, to remodel building for book store, etc.; extend 15 ft., add 2 stories, making structure 50x140 ft., 3 stories; plate-glass front with marble base; passenger elevator; mezzanine; lodgeroom on second floor; offices on third; cost about \$25,000; Witt, Selbert & Co., Archts., Texarkana. (Lately noted.)

Md., Baltimore.—Morton C. Stout, 26 E. Baltimore St., let contract to Consolidated Engineering Co., 243 Calvert Bldg., Baltimore, to erect store at 215 N. Charles St.; 3 stories; 25.5x87 ft.; brick and stone; slag roof; steam heat; cost \$23,000; Baldwin & Pennington, Archts., 601-7 Professional Bldg., Baltimore. (Lately noted.)

Mo., St. Louis.—Edw. Mallinckrodt let contract to A. H. Haesler Building Co. to alter building at 901-7 Washington St.; cost \$8000.

N. C., Asheville.—L. H. Pollock, Mgr. of Globe Sample Co., is reported to have let contract to construct front and remodel interior of building on Biltmore Ave.

N. C., Charlotte.—D. H. Anderson let contract to U. S. Goode to rebuild burned structure.

S. C., Beaufort.—Chas. E. Danner Co. let contract to J. J. Knopf, Fairfax, S. C., to erect wholesale grocery store; 50x150 ft.;

ordinary brick construction; tin roof; cost \$4000.

Tex., Dallas.—R. H. Stewart let contract to Z. W. Self to alter building for store; cost \$7500; H. A. Overbeck, Archt., Dallas. (Lately noted.)

Va., Norfolk.—W. T. Gregory, Norfolk, has contract at about \$10,000 to alter Fergus Reid Bldg. at Granby and Freemason Sts.; will divide into 5 stores fronting on Granby St., each about 20x100 ft.; provide plate-glass fronts; ornamental sheet-iron cornice; curved mirrors and mahogany finish in show windows, etc.

THEATERS

Va., Fredericksburg.—Benj. T. Pitts let contract to E. G. Hefflin, Fredericksburg, to erect theater; 2 stories; fireproof; cement floors and stairways. Seating capacity 650; cost \$21,000.

WAREHOUSES

Ky., Paducah.—B. H. Scott estate let contract to Jack Cole to erect warehouse to be occupied by W. R. Nagel & Co. for tobacco; 30,000 sq. ft. floor space.

Md., Baltimore.—C. B. Watkins let contract to Hy. Pierson & Sons, 1000 Olive St., Baltimore, to erect warehouse at 723-5 S. Charles St.; 2 stories; 28x53 ft.; brick; slag roof; cost \$4200.

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Combs.—On the Black Mountain & Eastern R. R., being built by the J. H. Phipps Lumber Co. of Fayette, Ark., from Combs to Cass, 18 mi., about 16 mi. of track are laid. Burke Construction Co., Fort Smith, Ark., is the general contractor.

Ark., Shawmut.—Construction of an extension of the Memphis, Dallas & Gulf R. R. from Shawmut to Arkadelphia, Ark., 24 mi., is believed to be assured this year. W. P. Hart is Ch. Engr. at Nashville, Ark.

Fla., Green Cove Springs.—Concerning the proposition to build a railroad from Green Cove Springs to Starke, 25 mi., the Dowling-Shands Lumber Co., R. L. Dowling, Prest., says unmatured plans are under consideration, but there is nothing tangible now.

Fla., Jacksonville.—Construction of an electric interurban railway from Jacksonville to Middleburg, 24 mi., is reported begun. Charter will be applied for. Temporary organization includes Haley & Helms, Atty.; C. G. Wilson, Treas., and A. W. MacKinlay, Gen. Mgr. and Ch. Engr.

Fla., Tavares.—Tavares & Gulf R. R., recently completed extension of about 3 mi. from Winter Garden to Ocoee, Fla.

Fla., West Palm Beach.—H. G. Geer, V.-P., says Palm Beach-Everglades Ry. Co. has applied for charter and intends to push construction as soon as authorized. Offices opened in McGinley Bldg. Proposed line is 70 mi. from West Palm Beach to Lake Hitchcock via Lake Okechobee, around the southern end of the latter. Will be built this year. Date of opening bids not yet set. Chas. H. Baker of New York is Prest.; H. G. Geer of Palm Beach, V.-P.; T. J. Campbell, Treas.; W. H. DaCamara, Secy., both of West Palm Beach; James A. Moore of Miami, Fla., Gen. Mgr. Others directors are M. B. Lyman of Lantana, Fla.; T. T. Reese, J. B. McGinley, Geo. G. Currie, H. P. Dye, M. E. Gruber, Geo. W. Potter, Geo. O. Butler and Geo. B. Baker of West Palm Beach; W. M. Butterworth of Miami and R. J. Bolles of Jacksonville, Fla.

Ga., Gainesville.—Stewart & Jones, contractors for second-track construction on the Southern Ry., have begun grading between New Holland and White Sulphur, which work will include some revision of line.

Ga., Lula.—Lula-Homer R. R. Co., which proposes to build a line 14 mi. long from Lula to Homer, Ga., has been authorized by the State railroad commission to issue \$185,000 of stock for construction. Action deferred on proposed issue of \$125,000 of first mortgage bonds. S. S. Carter, Lula, Ga., is Prest. D. G. Zeigler is Engr.

Md., Baltimore.—Gamble Latrobe, Gen. Agt. Pennsylvania R. R., has submitted to Mayor J. H. Preston outline of plans for improvements in Baltimore, including parallel double-tracked tunnels for its main lines north and south of Union Station, following the beds of Preston St. and McMechen St., respectively; also a short four-tracked tunnel between Union and Calvert stations. The

McMechen St. tunnel would be about 1½ mi. long and the other ¼ mi. Considerable yard trackage is also proposed. Entire subject still in formative stage.

Mo., Kirksville.—The Kirksville Commercial Club is reported getting subscriptions to raise \$20,000 to extend Big Creek R. R. to coal and clay deposits nearby.

N. C., Andrews.—R. L. Herbert is reported to have construction contract for the Hiwassee Valley R. R. in Clay county. Line will be 26 mi. long from Andrews to Hayesville. C. N. Malone & Co. of Asheville bought the county bonds issued to aid line. S. E. Cover of Andrews is Prest.

Okla., Jennings.—Construction is reported well advanced on the Oil Belt Terminal R. R. between Jennings, Drumright and Cushing, 20 mi. Contractors have completed as far as the Cimarron River. Hon. C. N. Haskell of Tulsa is Prest. and Henry Fulton is Ch. Engr.

Okla., Miami.—John R. Rose of Oklahoma City, represents Oklahoma & Interstate Ry. Co., which proposes to build an electric interurban railway from Miami, Okla., to Baxter Springs, Kan., and other points, including Collinsville, Okla., and possibly Tulsa. Offices will be opened at Miami.

Tenn., Fayetteville.—Construction bids for the Tennessee & Alabama R. R. Co.'s proposed line from Fayetteville, Tenn., to Huntsville, Ala., about 34 mi., via Stewart Creek and Lincoln, will be received and opened about May 1. One 1000-ft. bridge required. Route through rolling country. H. A. Pamplin is Prest., H. K. Holman V.-P., H. C. Watts Treas., W. W. Morris Secy., and J. E. Hurd Gen. Mgr. and Ch. Engr. Address Mr. Hurd as Ch. Engr. Oil Belt Ry. at Oblong, Ill.

Tex., Nacogdoches.—Nacogdoches & South-eastern R. R., which has graded an extension of 6 mi. from LaCorda, Tex., southeast, will probably lay track on it next summer. W. P. Smith is Auditor and Supt.

Tex., San Antonio.—The San Antonio, Uvalde & Gulf Ry. has been authorized to issue \$163,000 of receivers' certificates, considerable of which will be used for betterments and to finish the line between Odontonio, is receiver.

Va., Charlottesville.—Southern Ry. is getting bids for revision and double-tracking of main line between Orange and Charlottesville, 25.7 mi.; approximate cost \$1,500,000. W. H. Wells is Ch. Engr. of Constr., Washington, D. C.

W. Va., Beckley.—John Anderson, Gen. Mgr. Superior Black Coal Co., which is developing mines in Lincoln county, is quoted saying that construction has begun on a railroad from the Coal River branch of the Chesapeake & Ohio Ry. to the coal lands.

STREET RAILWAYS

Ga., Columbus.—Columbus R. R. Co. is reported planning to build extension in the lower part of Girard. S. Blecker is Mgr.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Acetanilid Pur.—J. M. Schapira, Athens, Greece.—Quotations on acetanilid pur. Submit offers per cent. kilos, f. o. b. New York.

Asphalt.—See Bituminous Material.

Automobiles.—See Fire Department Apparatus.

Bank Fixtures.—Farmers & Merchants' Bank, C. N. Thompson, Pres., Piedmont, Ala.—Prices on bank fixtures and safe.

Bank Fixtures.—R. E. Gilmore, Post, Tex.—Prices on bank fixtures and vault doors for \$10,000 bank building.

Bathroom Equipment.—C. E. Wynne, Tiptonville, Tenn.—Prices on equipment for 3 bathrooms.

Belted (Canvas or Leather).—See Woodworking Machinery, J. B. Conlisk.

Bituminous Material.—Dept. of Agriculture, D. F. Houston, Secy., Washington, D. C.—Bids until Jan. 26 to furnish bituminous road materials at Arlington Farms Siding, Rosslyn, Va., and at Alexandria, Va.; about 41,500 gals. oil asphalt, 41,500 gals. fluxed native asphalt and 4000 gals. refined tar; specifications obtained at Office of Public Roads.

Blackboards.—See Building Materials.

Boiler.—See Crushing (Rock) Plant, etc., A. B. Cook.

Boiler.—Williamson Light & Ice Co., O. B. Welch, Gen. Mgr., Williamson, W. Va.—72-in. by 18-ft. return tubular boiler; must have boiler insurance certificate for 215 lbs.

Boilers and Engines.—Garrison Revolving Plow Co., W. H. Harp, Mgr., Bergman, Ark.—Prices on boilers, engines, 40 H. P., 36 H. P.

Boots.—M. E. Hazzan & Fils, Boite Postale 849, Alexandria, Egypt.—Correspondence with manufacturers of boots; view to representation.

Box Manufacturers.—See Egg Containers.

Bridge Construction.—Palo Pinto County Commrs., Court, Palo Pinto, Tex.—Bids until Feb. 8 to construct bridges and culverts on roads in Dist. No. 1; bids received for all work to be done as one contract or as separate contract for each road; plans and specifications on file with J. W. Brock, County Clerk, Palo Pinto, and with Jas. C. Travilla, Engr., Mineral Wells; may be obtained for \$10.

Bridge Construction.—Office State Highway Com., G. P. Coleman, Commr., Richmond, Va.—Bids Jan. 28 to erect bridge across Chickahominy River, ¼ mi. from Ellerson, in Hanover and Henrico counties; reinforced concrete superstructure; piles and plain concrete substructure; substructure to include tearing down present bridge and placing same on banks; plans and specifications at office or at offices of Circuit Courts, Hanover Courthouse (Hanover county); Henrico Courthouse (Henrico county); blueprints obtainable from Childrey Co., Richmond, for 21 cents and postage.

Bridge Construction.—G. P. Coleman, State Highway Commrs., Richmond, Va.—Bids until Feb. 1 to construct 4½ mi. gravel highway between city limits and Chickahominy bridge in Henrico county; plans, etc., on file at office County Clerk; specifications on application.

Broom Machinery.—C. C. Hutchinson, Lyons, Va.—Machinery to manufacture brooms.

Building Materials, etc.—Douglas Mackintosh, Archt., Keystone Bank Bldg., Pittsburgh, Pa.—Catalogues, samples and prices on materials and supplies of interest to architects.

Building Materials.—Jos. E. Morgan, 209 N. Kansas St., El Paso, Tex.—Prices on Vitrolite partitions, compo floor, tile floors, marble and terrazzo, roofing, glass, millwork, sash, doors and blackboards.

Building Material.—D. L. Barlow, 324 13th Ave., Huntington, W. Va.—Prices on roofing, doors and windows for dwelling.

Building Material, etc.—W. H. Fiskell & Co., 1133 Broadway, New York.—Sub-

bids on all branches of construction for postoffice at Cookeville, Tenn.

Building Materials.—R. E. Gilmore, Post, Tex.—Prices on brick, iron work, millwork and tile floors for \$10,000 bank building.

Candelabra.—Mrs. R. P. Crump, Nitta Yuma, Miss.—Addresses of manufacturers of candlestick or ornamental candelabra.

Cars.—Thaw & Williams, Bell Block, 6th and Vine Sts., Cincinnati, O.—Thirty 6-yd. 2-way dump cars, 36-in. or standard gauge.

Canned Goods.—See Food Products, etc., Victor Chr. Pavlides.

Chains.—See Hardware, Spencer Lumber Co.

Chairs.—P. C. Jones & Co., Circular Quay, Sydney, Australia.—Correspondence with manufacturers of chairs of fairly cheap line; view to representation.

Chocolate Manufacturing Machinery.—Chocolate Products Co., Chas. G. Guth, Pres., Pratt and Concord Sts., Baltimore, Md.—Complete chocolate manufacturing machinery, dippers, millers, driers, finishers, etc., for 15,000 lbs. daily capacity. (Has purchased power and transmission equipment.)

Concrete Tanks.—City, Ben Campbell, Mayor, Houston, Tex.—Bids until Jan. 25 to construct reinforced concrete collecting tanks for Water Dept.; estimated cost \$6600; plans and specifications, etc., on application to E. E. Sands, City Engr.

Confectionery.—See Food Products, etc., Victor Chr. Pavlides.

Cotton (Canton) Cloth.—American Glove & Knitting Co., Wm. M. Lindhard, Pres., Muskogee, Okla.—Prices and freight rates from manufacturers of cotton cloth.

Cotton Goods, etc.—Victor Chr. Pavlides, Negotiant-Commissionaire, B. P. 867, Alexandria, Egypt.—Correspondence with American manufacturers and exporters, view to representation, on commission, of following: Cottons; woollen, silk and linen goods; hats, cloth, shirts, collars, neckties, etc.; flannels, underclothing, boots and shoes, gloves, etc.

Cotton Goods.—M. E. Hazzan & Fils, Boite Postale 849, Alexandria, Egypt.—Correspondence with manufacturers of cotton goods; view to representation.

Crane.—Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Feb. 2 on 5-ton jib crane, schedule 7797, delivery Boston, Mass.

Crane.—Thaw & Williams, Bell Block, 6th and Vine Sts., Cincinnati, O.—10-ton locomotive crane; 40-ft. boom, with clamshell.

Crematory.—W. A. Spangler, Mayor, Bonham, Tex.—Bids until Jan. 29 to construct and equip garbage crematory; has sewerage system; population 6500; each bidder to submit full description proposed plant.

Crushing (Rock) Plant, etc.—A. B. Cook, Propr. Wakefield Granite Quarries, Petersburg, Va.—Repairs to No. 2 Climax crusher; elevating and screening machinery for same; small gravel and stone-washing plant; dust extractor for crushed stone; small stationary sawmill for plantation; 50 to 100 H. P. upright boiler; 25 to 75 H. P. engine.

Derrick.—Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Feb. 2 on steel derrick, schedule 7812, delivery Philadelphia, Pa.

Dies.—Marion Roovaart, 314 E. 1st St., Pella, Iowa.—Addresses of manufacturers who make dies to order.

Derrick.—Thaw & Williams, Bell Block, 6th and Vine Sts., Cincinnati, O.—Stiff leg or guy derrick; 50-ft. boom with 7x10 or 8x10 D. D. hoist; with or without boiler, or will consider 3-drum; either must have awinger.

Doors and Windows.—See Building Material.

Dredge Bucket (Orange-peel).—Maryland Supply & Equipment Co., Box 770, Baltimore, Md.—½-yd. Hayward orange-peel bucket, ore bowl.

Dynamite and Powder Materials.—J. M. Schapira, Athens, Greece.—Exclusive agencies and quotations for immediate or quickest delivery of following, for Government or private supply: Trinitrotoluol, trinitrophenol, acetone pure, antymonle, metallic, nitrate de potasse double raffinee, cotton a nitrer, glycerine nobel, camphor pur, for dynamite and powder manufacturing. Submit offers per per cent. kilos f. o. b. New York.

Egg Containers.—F. W. Edwardy, Hotel Ansley, Atlanta, Ga.—Correspondence with manufacturers relative to making egg containers or boxes in lots of 50,000 or more.

Electric-lighting System.—Royal Theater, Arkadelphia, Ark.—Prices on electric-lighting system large enough to run a Powers 6A motion-picture machine and 250-watt lights.

Electric Fixtures.—C. E. Wynne, Tiptonville, Tenn.—Prices on electric fixtures and wiring for 20-room hotel.

Electric Motors.—See Woodworking Machinery, J. B. Conlisk.

Electrical Equipment.—Bureau Supplies and Accounts, Samuel McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Feb. 2 on following: 4000 searchlight carbons, 100,000 ft. double conductor, 36,000 ft. telephone cord and 5500 ft. twin conductor wire, all Sch. 7803, delivery Brooklyn, N. Y.; 72,000 ft. lamp cord, Sch. 7800, delivery Brooklyn; miscellaneous induction motors, Sch. 7816, delivery Norfolk, Va.

Electrical Equipment.—R. E. Gilmore, Post, Tex.—Prices on electrical equipment for \$10,000 bank building.

Electrical Machinery.—Michel LePage, Ingenieur, 3, Villa Primevere Arenes, Bayonne, France.—Interested in electrical apparatus and general equipments; view to agencies on commission.

Elevator.—Rev. W. G. Francis, 327 S. President St., Jackson, Miss.—Information on elevator for \$20,000 home.

Engine.—See Crushing (Rock) Plant, etc.

Engine (Corliss).—Chas. A. McLean, 412 Citizens' Bank Bldg., Norfolk, Va.—Prices on second-hand Corliss engine; right-hand, first-class condition, 600 to 700 H. P.

Engine (Oil).—Custom Roller Mills, Bryson City, N. C.—Interested in 30 H. P. oil engine of standard make; new or second-hand.

Excavation.—W. T. Watt, Waco, Tex.—Bids until Jan. 22 to excavate and remove about 10,000 cubic yards earth; plans and specifications obtainable from Milton W. Scott & Co., Waco.

Engines.—See Boilers and Engines, Garrison Revolving Plow Co.

Felt.—Herman E. Wendell, Gulfport, Fla. Prices on deadening felt for school at Pinellas Park, Fla.

Fire Department Apparatus.—City, F. T. Patterson, Clerk, Newbern, N. C.—Bids until Feb. 1 for triple combination motor car for fire department; capacity not less than 800 gals. per minute.

Flour Mill.—L. C. Parish, Caraway, N. C.—Set of second-hand rollers, etc., for flour mill.

Flour.—See Food Products, etc., Victor Chr. Pavlides.

Food Products, etc.—Victor Chr. Pavlides, Negotiant-Commissionaire, B. P. 867, Alexandria, Egypt.—Correspondence with American manufacturers and exporters, view to representation, on commission, of following: Flour, grocers' articles, canned goods (including meat, roast beef, corned beef, mutton, veal, sausage, salmon, mackerel, butter, marmalades, mustard, fruits—California pineapple, pears, etc.); confections, chocolates, caramels, biscuit, etc.

Foundry Equipment.—Baltimore Gas Appliance & Mfg. Co., Bayard and Hamburg Sts., Baltimore, Md.—Machinery for manufacturing gas stoves.

Foundry and Machine Shop.—Bailey Tool Co., Thomas and Clayton Sts., Athens, Ga.—Small foundry and machine shop and equipment for general repairs.

Gas Plant.—City, W. L. Rilling, Mayor, Lake Charles, La.—Bids for gas franchise; plant to have minimum capacity 100,000 cu. ft. and 12 mi. mains.

Gas Stove Machinery.—See Foundry Equipment.

Gloves.—See Cotton Goods, etc., Victor Chr. Pavlides.

Gongs (Brass or Steel).—W. B. Crossland, Newport, Ark.—500 8x3½-in. steel or brass gongs.

Gravel.—Palo Pinto County Commrs., Court, Palo Pinto, Tex.—Bids until Feb. 8

to furnish 5000 cu. yds. road gravel on cars, f. o. b. Mineral Wells, Tex., to improve roads in Road Dist. No. 1; sample of gravel to be submitted with proposal; J. W. Brock, County Clerk, Palo Pinto.

Hardware.—Spencer Lumber Co., Gastonia, N. C.—Hardware specialties for use in manufacture of porch swings, etc., including hooks and chains.

Hats.—See Cotton Goods, etc., Victor Chr. Pavlides.

Hauling Stone Chips.—Maryland State Roads Com., O. E. Weller, Chmn., 601 Garrett Bldg., Baltimore, Md.—Bids until Jan. 25 for hauling about 4300 tons stone chips for oiling State roads; Howard county, contract No. 10, 1768 tons; Carroll county, contract No. 11, 1143 tons; Montgomery county, contract No. 12, 1898 tons; specifications and plans on application.

Heating Equipment.—R. E. Gilmore, Post, Tex.—Prices on hot-water heating equipment for \$10,000 bank building.

Heating Plant.—D. L. Barlow, 324 13th Ave., Huntington, W. Va.—Prices on hot-water heating plant for dwelling.

Heating Plant.—C. E. Wynne, Tiptonville, Tenn.—Prices on hot-water heating plant for 20-room hotel.

Heating Plant.—L. E. Davis, Benton County Judge, Camden, Tenn.—Prices on heating plant for \$40,000 courthouse.

Hoops (Barrel, Iron).—See Metals (Iron, Copper, Steel, Brass, etc.), J. M. Schapira.

Hooks (Metal).—See Hardware, Spencer Lumber Co.

Hosiery.—M. E. Hazzan & Fils, Boite Postale 849, Alexandria, Egypt.—Correspondence with manufacturers of hosiery; view to representation.

Ice Machinery.—F. C. Stover, Strasburg, Va.—Addresses of manufacturers of small ice plants.

Lathe.—Geo. J. Adams, 39 South St., corner Old Slip, New York.—Second-hand lathe for turning locomotive tires; 36 in. diam.

Lathe.—C. F. Harry, Grover, N. C.—42-in. machine lathe.

Lathe.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Feb. 2 for lathe, delivery navy-yard, Boston, Mass.; proposals at navy pay office, Boston, and with Bureau.

Lathe (Turret).—Bureau Supplies and Accounts, Samuel McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Feb. 2 on 24x24 turret lathe, Sch. 7811, delivery Washington, D. C.

Lead (Pig).—J. M. Schapira, Athens, Greece.—Quotations on pig lead. Submit offers per cent. kilos, f. o. b. New York.

Levee Construction.—Mississippi River Com., Clarke S. Smith, Major, Engrs., 1311 International Life Bldg., St. Louis, Mo.—Bids until Feb. 8 to construct about 100,000 cu. yds. earthwork in Elsberry Drainage Dist.; information on application.

Lighting Systems.—See Sawmill Equipment.

Locomotives (Dinky).—See Sawmill Equipment, P. K. Fulton.

Locomotive.—Maryland Equipment & Supply Co., Box 770, Baltimore, Md.—18-ton, 36-in. gauge, direct-connected locomotive, with trucks, for logging.

Locomotives.—Geo. J. Adams, 39 South St., corner Old Slip, New York.—Two 20-ton saddle-tank locomotives; 48-in. gauge.

Locomotives.—Thaw & Williams, Bell Block, 6th and Vine Sts., Cincinnati, O.—Four 18 to 20-ton saddle-tank locomotives, 36-in. or standard gauge.

Lumber (Ash).—Universal Finance Co., Dodge Bldg., Jefferson Ave., Detroit, Mich.—Correspondence with manufacturers of ash timber suitable for making shovel handles. Give data on location and shipping facilities.

Lumber Camp Equipment.—See Sawmill Equipment, P. K. Fulton.

Matcher (Box Board).—C. F. Harry, Grover, N. C.—New or second-hand box-board matcher.

Metals.—Bureau Supplies and Accounts, Samuel McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Feb. 2 on following: Aluminum, Sch. 7816; bar and disc brass, Sch. 7813, and 8000 lbs. sheet brass, Sch. 7804, delivery Norfolk, Va.; rod brass and 500 lbs. sheet copper, Sch. 7805; 275 flasks and 10 afterbody shells, Sch. 7810, delivery Newport, R. I.; 500 focusing caps, Sch. 7810, delivery Washington, D. C.; 300 lbs. sheet Muntz metal, Sch. 7804, delivery Boston, Mass.; miscellaneous positive and

negative tandem plates, Sch. 7798, delivery East and West.

Metals (Iron, Copper, Steel, Brass, etc.).—J. M. Schapira, Athens, Greece.—Exclusive agencies and quotations f. o. b. New York, for immediate or quickest delivery of following, for Government and private supply: Pig-iron (fer marchand); copper in sheets and bottoms; brass metals; brass tubes; copper tubes; tinplates (I. C. and I. C. W.); galvanized flat and corrugated sheets 26 G; black plates (Acier doux Thomas); steel rails; iron hoops for barrels and casks; steel plates for shipbuilding; galvanized mild steel iron ropes; galvanized mild iron ropes; wire for nail manufacturing (Poinotes de Paris). Will furnish specifications on demand.

Mining Machinery.—See Stamp Mill, Alex. Brazil.

Mining Machinery.—Michel LePage, Ingenieur, 3, Villa Primevere-Arenes, Bayonne, France.—Interested in various kinds of mining machinery; view to agencies on commission.

Moulder.—John G. Carroll, Louisburg, N. C.—Second-hand 6-in. moulder.

Paint (Concrete).—Herman E. Wendell, Gulfport, Fla.—Prices on concrete paint of coloring mixture for school at Pinellas Park, Fla.

Painting.—Tennessee River Bridge Committee, Theo. F. King, Chrmn., Chattanooga, Tenn.—Bids until Jan. 26 to apply second coat of paint Walnut St. bridge across Tennessee River at Chattanooga; specifications, blank proposal forms, contract and bond furnished on application at office County Engr., County Courthouse; application to be accompanied by \$5 deposit.

Paper Tubes.—See Textile (Clothroom) Machinery.

Partitions.—See Building Materials.

Rails.—See Sawmill Equipment, P. K. Fulton.

Paving.—City Commrs., Galveston, Tex.—Bids at office John D. Kelley, City Secy., until Jan. 21 to construct 21,300 sq. yds. vitrified brick pavement; plans and specifications prepared by A. T. Dickey, City Engr., and on file in his office.

Paving.—City of Marshall, Tex., H. S. Rice, City Secy.—Bids until Jan. 26 for about 9000 sq. yds. asphalt macadam or asphaltic concrete pavement, with concrete curbs, gutters, inlets, drainage, etc.; plans and specifications on file office of City Engr.

Pharmaceutical Articles, etc.—Victor Chr. Pavlides, Negotiant-Commissionaire, B. E. 867, Alexandria, Egypt.—Correspondence with American manufacturers and exporters, view to representation, on commission, of pharmaceutical articles and medicines.

Piling (Sheet Steel).—L. F. Hobbs, Box 483, Norfolk, Va.—500 or 600 pieces 12-in. by 45-ft. sheet steel piling, with 12 corners for same; first-class, second-hand, ready for immediate shipment.

Piling (Interlocking Wood).—Herman Engineering Co., Engr., W. C. Maddox, Peoria, Ill.—Addresses of manufacturers of interlocking wood sheet piling.

Pipe (Sewer).—Elmer C. Williams, Salisbury, Md.—Prices on 3000 to 5000 ft. 8, 10 and 12-in. sewer pipe.

Pipe, Tubing, etc.—Bureau Supplies and Accounts, Samuel McGowan, Paymaster-Gen., Washington, D. C.—Bids opened Feb. 2 on following: 1300 ft. brass conduit, Sch. 7803, and steel boiler tubes, Sch. 7813, delivery Brooklyn, N. Y.; composition pipe fittings, Sch. 7805, delivery Boston and Brooklyn; 165,000 lbs. brass tubes and 2000 lbs. brass tubing, Sch. 7803, delivery Newport, R. I.; miscellaneous unions, Sch. 7805, delivery Boston, Mass.

Piping and Tubing.—J. M. Schapira, Athens, Greece.—Quotations on iron tubes and pipes for gas, steam and water; American or English standard. Submit offers per cent. kilos f. o. b. New York.

Planer.—Ideal Box & Crate Co., Mobile, Ala.—Planer.

Pottery Molds.—Alfred M. White, Brownsville, Tex.—Data and prices on flower-pot molds; 2 to 12 in.

Presses (Baling, Waste).—J. L. Roark estate, Greenville, Ky.—Catalogue and prices on waste paper baling machines.

Presses (Embossing, etc.).—Bauman & Brown Mfg. Co., Jacksonville, Fla.—Embossing press to carry dies up to 20-in. or 40-in.; also press for stamping out small metal parts.

Pulleys (Sash).—Herman E. Wendell, Gulfport, Fla.—Prices on spring balance sash pulleys for school at Pinellas Park, Fla.

Rails.—See Metals (Iron, Copper, Steel, Brass, etc.), J. M. Schapira.

Refrigerating Machinery.—M. R. Mitchell, Jackson, Miss.—Correspondence with manufacturers of refrigerator machinery.

Road Construction.—Palo Pinto County Commrs.' Court, Palo Pinto, Tex.—Bids until Feb. 8 to improve following roads in Road Dist. No. 1: Mineral Wells and Weatherford Rd. and Mineral Wells and Palo Pinto Rd., 6.3 mi.; Mineral Wells and Graford Rd. and Salesville Rd., 6.6 mi.; Mineral Wells Rd. and Fairview Rd., 8 mi.; Mineral Wells and Willow Pond Rd. and old Weatherford and Palo Pinto Rd., 10 mi.; Mineral Wells and Staggs Prairie Rd., 5.8 mi.; proposed to let all nine roads in one contract, either with or without concrete bridges and culverts, or in five contracts, as written above, with or without concrete bridges and culverts; plans and specifications on file with J. W. Brock, County Clerk, Courthouse, and with James C. Travilla, Engr., Mineral Wells, Tex.; may be obtained for \$10.

Road Materials.—See Bituminous Material.

Road Roller.—Maryland Equipment & Supply Co., Box 770, Baltimore, Md.—5-ton Iroquois or Kelly tandem road roller.

Road Roller.—Gulf Paving Co., Chattanooga, Tenn.—Prices on 8-ton tandem-roller, for work, Quitman, Ga.

Road Roller, etc.—Prairie County Road Improvement Dist. No. 1, A. L. Aydelott,

Shoes.—See Cotton Goods, etc., Victor Chr. Pavlides.

Sprinkler.—Prairie County Road Improvement Dist. No. 1, A. L. Aydelott, Commissioner, Devall Bluff, Ark.—Sprinkler. (See Road Roller, etc.)

Stamp Mill.—Alex. Brazil, 216½ Bibb St., Montgomery, Ala.—Data and prices on gold-mining machinery; wants small and cheap stamp mill.

Steam Shovel.—Thaw & Williams, Bell Block, 6th and Vine Sts., Cincinnati, O.—Model 60 Marion steam shovel, or its equal.

Stearine.—J. M. Schapira, Athens, Greece.—Quotations on oleo stearine for candle manufacturing. Submit offers per cent. kilos f. o. b. New York.

Stills (Wood Alcohol).—T. M. Street, Clarksdale, Miss.—Prices on wood alcohol stills for manufacturing from corn, wood waste, etc.

Stump Pullers, etc.—J. X. McDonald, Carolina Pl., Wilmington, N. C.—Data and prices on land-clearing or stump-pulling machines.

Sugar Refining Machinery.—Michel LePage, Ingenieur, 3, Villa Primevere-Arenes, Bayonne, France.—Interested in sugar refining machinery; view to agencies on commission.

Tank (Septic, for Sewage Disposal).—City of San Benito, Tex., J. H. Lyons, Mayor.—Prices and estimates on tanks for septic sewage disposal.

FOR the benefit of business concerns, engineers, contractors, machinery manufacturers, dealers and others who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department,

We issue every Business Day in the Year THE DAILY BULLETIN

The construction news as published in the Daily Bulletin is invaluable to all business people who want to keep in daily touch with the organization of business enterprises of all kinds throughout the whole South. Unlimited possibilities for the creation of business, for securing contract work, for the sale of machinery and supplies of all kinds, for bond buyers and others, are to be found through a close following up of the news in the Daily Bulletin.

The Daily Bulletin is an exceptionally desirable advertising medium.

The subscription price is \$25.00 a year. Are you a subscriber to it, or an advertiser in it? If not, you are missing an opportunity for profitable business.

Commr., Devall Bluff, Ark.—Prices on 10-ton roller and a sprinkler.

Road Scarifiers.—Jas. R. Moorhead, Ocala, Fla.—Addresses of manufacturers of scarifiers suitable for county road purposes.

Roofing.—See Building Materials.

Rope (Manila).—J. M. Schapira, Athens, Greece.—Quotations on manila ropes. Submit offers per cent. kilos f. o. b. New York.

Safe.—See Bank Fixtures.

Saws.—Ideal Box & Crate Co., Mobile, Ala.—Rip and cut-off saws.

Sawmill.—A. B. Cook, Propr. Wakefield Granite Quarries, Petersburg, Va.—Small stationary sawmill for plantation. (See Crushing (Ro k) Plant, etc.)

Sawmill Equipment.—P. K. Fulton, care Houston Bulletin, Houston, Tex.—Data and prices on sawmill equipment, including relay rails, dinky engines and lighting system, etc., for lumber camp.

Sewer Construction.—Board of Public Affairs, Chas. E. Taylor, Prest., Little Rock, Ark.—Bids until Jan. 21 to construct 1 mi. of sewers; 10, 12 and 15-in. sewer pipe; plans and specifications at office Supt. of Public Works.

Shears (Alligator).—Raleigh Iron Works Co., Raleigh, N. C.—Alligator shear for cutting scrap iron up to 3-in. diam.; consider second-hand machine, good condition, low price.

Shingles (Asbestos).—Herman E. Wendell, Gulfport, Fla.—Prices on asbestos shingles for school at Pinellas Park, Fla.

Tanks (Concrete).—See Concrete Tanks.

Tar.—See Bituminous Material.

Textile (Clothroom) Machinery.—Inverness Mills Co., Winston-Salem, N. C.—Used clothroom machinery, 90 to 100 in. wide; also paper tubes for winding cloth, 75 to 90 in. wide.

Textile Machinery.—Michel LePage, Ingenieur, 3, Villa Primevere-Arenes, Bayonne, France.—Interested in machines and equipment for textile industries; view to agencies on commission.

Textiles (Woolen, Silk and Linen).—See Cotton Goods, etc., Victor Chr. Pavlides.

Terra-cotta Veneering.—J. B. Long, Wauchula, Fla.—To correspond with manufacturers of large columns or terra-cotta veneering for columns 30 in. at base and 24 in. at top, 26 ft. high.

Trucks.—Ideal Box & Crate Co., Mobile, Ala.—Trucks.

Vault Doors.—See Bank Fixtures.

Well Drilling.—Short Grass Oil & Gas Co., Englewood, Kan.—Open bids March 1 on well drilling, Lawton, Okla.

Well-drilling.—J. C. Rogers, Chrmn. Commrs., Rector, Ark.—Bids until Feb. 3 to drill 10-in. wells for water-works; specifications at office of Chrmn. and obtained from Frank L. Wilcox, Consult. Engr., Syndicate Trust Bldg., St. Louis, Mo.

Well-drilling Machinery.—P. K. Fulton, are Houston Bulletin, Houston, Tex.—Prices on oil well drilling machinery.

Wharf Construction.—Dist. Commr., Daniel E. Garges, Chrmn., Wharf Com., 427 Dist. Bldg., Washington, D. C.—Bids opened Feb. 11 to remove 3 old wharves and construct 3 new wharves on timber piles with reinforced concrete decks, Water St. between 11th and 12th Sts. S. W.; cost about \$50,000; specifications obtainable from Chief Clerk, Engineering Dept., 427 Dist. Bldg.; \$5 deposit for plans; D. E. McComb, Engr. of Bridges.

Wire (Nails).—See Metals (Iron, Copper, Steel, Brass, etc.), J. M. Schapira.

Woodworking Machinery.—J. B. Conlek, Temple Planing Mill, Box 383, Temple, Tex.—Woodworking machinery (new, used or rebuilt); electric motors; wood split pulleys; canvas or leather belting.

Woodworking (Crate) Machinery.—H. M. Daniel, Nokesville, Va.—Data and prices on machinery for making coops or crates for poultry shipping.

Woodworking Machinery.—See Mather (Box Board), C. F. Harry.

A Successful Bank.

Chamber of Commerce,

Charlottesville, Va., January 9.

Editor Manufacturers Record:

We have a bank in our little city which we think has made a phenomenal growth, particularly in the face of the lull of business at the time of its organization. This bank, the National Bank of Charlottesville, began business September 21, 1914, and stands out prominently as the most brilliant business achievement in the history of this community. On the opening day this bank received deposits aggregating \$190,000, and has since steadily increased, until at the close of business December 21, just 90 days later, it had deposits of over \$400,000 and total resources of over \$700,000, a record that has never been approached in this section.

Such an accomplishment speaks volumes for the astuteness and enterprise of the business men of this community.

The bank is capitalized for \$200,000. Mr. Hollis Rinehart of Charlottesville, Va., is its president.

E. C. McCARTY, Secretary.

An Offer for Factories.

Business Men's Club,

Paris, Tenn., January 13.

Editor Manufacturers Record:

At a meeting of this association yesterday afternoon the secretary was authorized to close a deal with a series of small factories and industries for the purpose of locating the same in the city of Paris. The secretary is authorized to offer three practical sites and exemptions from taxation. The city also will offer free water and free electrical power for a number of years. We own our own water and light plant. The secretary is also authorized to offer as special inducement to the better grades of factories to the extent of \$15,000 subscriptions for local stock, and more if necessary.

Paris is a city of 7000, and has 16 flourishing industries. White labor is plentiful here. Individuals and incorporations interested will kindly correspond with this association at once.

LOUIS SPENCER DANIEL, Secretary.

To Avoid Mistakes.

Chamber of Commerce,

Rome, Ga., January 14.

Editor Manufacturers Record:

I note with much pleasure your editorial on the "Building Now" campaign as being waged by this organization in Rome.

The long experience and studious investigation by the MANUFACTURERS RECORD of Southern conditions, we feel, place you as the foremost authority on the economic, industrial and civic development of Southern communities. We feel that no one can make a mistake in pursuing policies advocated by your publication.

H. A. WHEELING, Secretary.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

FINANCIAL CORPORATIONS

Ala., Atmore.—First National Bank of Atmore, capital \$25,000, is approved; will begin business Feb. 1. Dr. J. P. McMurphy is Prest., M. Benerson V.-P., and Clyde Roberts Cash., other members of the board of directors being C. C. Huxford and Lonnie Greer.

Ala., Lincoln.—The Lincoln Bank & Trust Co. is organized with J. H. Wilson, Prest., and W. L. Hollingsworth, Cash.

Ala., Piedmont.—Farmers and Merchants' Bank is chartered and will begin business March 1. Capital \$25,000, of which \$15,000 is paid in. C. N. Thompson is Prest.; J. H. Barlow, V.-P.; J. W. Strange, Cash., all of Piedmont.

Fla., Kissimmee.—W. S. Witham of Atlanta is reported to have conferred with R. L. Hyer, Wm. Davis and J. D. Boggs of Orlando, Fla., and local business men with a view to establishing a trust company in Kissimmee.

Fla., Monticello.—First National Bank of Monticello, capital \$30,000, has applied for authority to organize; G. B. Glover, O. Z. Olin, Elizabeth A. Olin, R. C. Simpson and D. R. Palmer, organizers.

Ga., Pineora.—The Salzburger Bank of Pineora, capital \$25,000, has applied for charter. Incorporators include W. M. Exley, L. Weldinger, E. L. Tucker and A. J. Bunch of Pineora, and Wm. L. Gignilliat of Savannah, Ga.

Ga., Guyton.—Citizens' Bank is reported to have purchased the Edinburg County Bank and consolidated the two under the name of the former. New officers are James T. Wells, Prest.; J. M. Gann, V.-P.; R. J. Taylor, Cash.

Ga., Savannah.—American Bank & Trust Co. is granted charter; capital stock \$300,000; began business Jan. 14; W. V. Davis, Prest.; Geo. C. Heyward, Jr., and Harry C. Anderson, V.-Ps.; Valmore W. Lebey, Secy., and Treas.

Ky., Georgetown.—Georgetown building and Loan Association, capital \$100,000, is reported organized and will incorporate.

Ky., Louisville.—The Inter-Southern Life Insurance Co., G. G. Summers, Secy., and the Citizens' National Life Insurance Co., J. W. Peake, Secy., announce that an agreement for their consolidation into one corporation has been adopted by the boards of directors.

Md., Baltimore.—National Exchange Bank and National Howard Bank are merged under name of the former; capital \$1,500,000; surplus \$850,000. Waldo Newcomer is Prest., Summerfield Baldwin V.-P., and R. Vinton Lansdale Cash. Henry Clark was Prest. of the Howard Bank, Thos. O'Neill V.-P., and W. H. Roberts, Jr., Cash.

Miss., Itta Bena.—First National Bank of Itta Bena, which succeeds the Bank of Itta Bena, is approved; capital \$50,000. U. Ray is Prest.; A. Robinson, V.-P., and A. B. Reese, Cash.

Mo., Medill.—Farmers' Bank is organized with \$10,000 capital. George E. McHugh is Cash.

Mo., St. Louis.—Theis & Diestelkamp Investment Co. is incorporated; capital \$10,000; incorporators, Albert Theis, E. H. Theis and Edward J. Diestelkamp; will conduct general stock and bond business.

Okla., Tallihina.—First National Bank of Tallihina is inceptd. with \$25,000 capital and \$1250 surplus; began business Jan. 2, succeeding the First State Bank of Tallihina. S. L. Chowning is Prest.; John T. Bailey, V.-P., and T. A. Kelly, Cash.

Okla., Tulsa.—The Industrial Banking Institution, capital \$100,000, is reported to have perfected organization and will start business in February. J. C. Letcher, Secy. Commercial Club, may give information.

S. C., Coward.—Farmers and Merchants' Bank, capital \$25,000, is reported chartered with \$25,000 capital. J. C. Lynch is Prest. and E. L. Montgomery Cash.

S. C., Johnsonville.—Farmers and Merchants' Bank of Johnsonville, capital \$25,000, is reported chartered. S. B. Poston is Prest. and R. H. McElveen Cash.

S. C., Lake City.—Farmers and Merchants'

National Bank of Lake City is chartered; capital \$100,000; succeeds Farmers and Merchants' Bank; J. S. McClam, Prest.; S. B. Poston, V.-P.; T. J. Cottingham, Cash.

S. C., Pamplico.—Farmers and Merchants' Bank of Pamplico is chartered; capital \$25,000. W. A. Coleman is Prest. and C. W. Boyd Cash.

Tenn., Trenton.—Bank of Trenton and the Farmers' Exchange Bank are reported merged under the name of the former, whose capital is raised from \$39,000 to \$51,000; surplus \$25,000. G. W. Wade is Prest., W. T. Williams V.-P., W. L. Wade Cash.

Tex., Bardwell.—First National Bank of Bardwell, capital \$40,000, is chartered and succeeds the Bardwell State Bank and the Farmers' Guaranty State Bank. M. W. Wright is Prest. and C. W. Brown Cash.

Tex., El Paso.—Felix Martinez and Robert Krakauer, Prest. of the Chamber of Commerce, are reported planning to organize a farmers' loan and mortgage company in El Paso with \$250,000 capital.

Tex., Houston.—Texas Abstract Co. of Houston, capital \$25,000, is chartered; incorporators, Robert G. Johnson, Whitmore Morris and L. D. Hahn.

Tex., Nixon.—First National Bank chartered; capital \$25,000; P. H. Tom, Prest.; Eugene Wilson, Cash.

Va., Chatham.—Pittsylvania Building and Loan Association inceptd.; capital \$500 to \$25,000; J. P. Hunt, Jr., Prest.; W. R. Hendrick, Secy. and Treas.

Va., Danville.—National Bank of Danville and the Virginia National Bank are reported consolidated under the name of the former. D. A. Overbey is Prest. Capital \$175,000. W. W. Williamson is Prest. of the Virginia National, capital of which is \$100,000.

Va., Eastville.—Organization of a national bank for Eastville is reported in progress and stock subscribed. The Mayor may be able to give information.

Va., Portsmouth.—Central Fire Insurance Agency is incorporated; capital \$500 to \$5000. W. T. Claud is Prest. and S. T. Barclay Secy.

Va., Portsmouth.—A new savings and loan company is reported in process of organization with \$100,000 capital in shares of \$10 par each. Charles L. Reynolds, 310 New Kirm Bldg., is Mgr. for sale of stock.

W. Va., Clendenin.—A new State bank, it is reported, will be organized with \$25,000 capital, and Elmer Stephenson, Prest., and Brooks Payne, Cash.

NEW SECURITIES

Ala., Birmingham.—No bids were received for the \$300,000 5 per cent. Jefferson county jail warrants. Address Board of Revenue.

Ala., Birmingham.—It is stated that action on bids for the \$300,000 of 5 per cent. 1-6-year Jefferson county jail warrants is deferred by the Board of Revenue, R. F. Lovelady, Prest., until the meeting of the Alabama Legislature. Bids were invited for Jan. 11.

Ala., Birmingham.—Ordinance is approved to issue \$29,000 of 5½ per cent. municipal improvement bonds; denomination \$500. H. S. Ryall is City Clerk.

Ala., Gadsden.—\$30,000 of sewer bonds, 5 per cent., 30-year, are reported to have been sold for \$27,600 and accrued interest.

Ala., Hayneville.—\$150,000 of this (Lowndes) county road bonds are reported sold to Otto Marx & Co. of Birmingham.

Ala., Huntsville.—Election Feb. 15 on \$40,000 of city school bonds. Address City Commissioners.

Ark., Brookland.—\$9000 of 6 per cent. school bonds, dated Aug. 15, 1914, are reported sold to Gunter & Sawyers of Little Rock at 98.50.

Ark., Rector.—Bids will be received until 8 P. M. Feb. 3 for \$29,000 water and \$27,000 sewer 6 per cent. bonds; denomination \$500. J. C. Rogers is Chrmn. Water-works Dist. No. 1.

Ark., Rison.—\$25,000 of water and light plant bonds are to be issued and sold. Address Dr. A. B. Robertson.

Ark., Texarkana.—\$24,300 of grading, graveling and curbing bonds Commrs'. Improvement Dist. No. 21 have been purchased by the Merchants and Planters' Bank of Texarkana.

Fla., Apalachicola.—\$35,000 5 per cent. 30-year bonds Special Tax Dist. No. 1, Franklin county, have been purchased at par, less \$1600 for attorney's fees, etc., by Cutter-May Co., Chicago.

Fla., Arcadia.—Bids will be received until 2 P. M. Feb. 2 by the Board of Commrs. De Soto County for \$350,000 6 per cent. 30-year

bonds Special Road and Bridge Dist. No. 5; dated October, 1914. A. L. Durrance is Clerk Circuit Court.

Fla., Arcadia.—Bids will be received until noon Feb. 1 for \$17,500 of 6 per cent. 30-year bonds of Sebring School Dist. No. 37 of De Soto county; also for \$15,000 of similar bonds of Nocatee School Dist.; also for an unsold balance of \$13,000 of 5 per cent. 30-year bonds of Arcadia School Dist. Address Jas. O. Bickley, Supt. Public Instruction.

Fla., Bartow.—Bids will be received by C. A. Parker, Supt. Board of Public Instruction Polk County, until 11 A. M. Jan. 26 for the following school bonds: \$3000 6 per cent. Davenport Dist. No. 38; \$40,000 Winterhaven Dist.

Fla., Brooksville.—\$50,000 of the \$300,000 Hernando county 5 per cent. road and funding bonds have been taken by the State at 85.

Fla., Pinellas Park.—Bids will be received until noon Feb. 4 for \$108,000 of 10-30-year Pinellas Park Drainage Dist. bonds. Address P. J. McDevitt, Secy. Drainage Board, Pinellas Park. Further particulars will be found in the advertising columns.

Fla., New Smyrna.—\$47,000 water-works, \$12,000 sewer and \$4000 funding bonds were voted at the election Jan. 12. Address The Mayor.

Fla., Tarpon Springs.—The election to vote on \$25,000 of school bonds will be held Feb. 20. \$18,000 will be used for taking up floating indebtedness and \$7000 for equipment. Address Supt. Hollins of Tarpon Springs School Board.

Fla., West Palm Beach.—H. W. Lewis, Supt. Public Instruction Palm Beach County, says that \$35,000 of school bonds (\$25,000 of Dist. No. 4 and \$10,000 of Dist. No. 7) have been sold to Cutter, May & Co. of Chicago at par, accrued interest and the blank bonds.

Ga., Buchanan.—Bids will be opened Feb. 1 for \$15,000 of 5 per cent. school-building bonds; denomination \$1000; dated Jan. 1 and maturing from 1926 to 1940. Address M. Bulard, Chrmn.

Ga., Chatsworth.—\$13,000 5 per cent. 30-year water bonds have been purchased by J. R. McCrary Co., Atlanta.

Ga., Unadilla.—\$12,000 of 5 per cent. 24-year refunding bonds were sold to J. H. Hillsman & Co. of Atlanta at 90.

Ky., Barbourville.—Petition will be filed with Rockcastle County Court, it is reported, on January 25 for an election on road bonds. Address County Commrs.

Ky., Carlisle.—Election will be held Mch. 27 on \$125,000 of Nicholas county road bonds. John F. Sugg may give further information.

Ky., Lancaster.—Bids will be received by W. F. Camp, Commr. Garrard County, until 1 P. M. Feb. 9 for \$15,000 5-15-year courthouse-improvement bonds; interest not to exceed 6 per cent.; denomination \$1000.

Ky., Maysville.—Petitions will be made for a good-roads bond election in this (Mason) county on April 10. In November a proposed issue of \$200,000 was lost by only a few votes. W. H. Rees is County Atty.

Ky., Mount Vernon.—Contemplated to hold election in this (Rockcastle) county on \$100,000 of road bonds. Address County Commrs.

Ky., Sebree.—Bids will be received until 7 P. M. Feb. 1 by Vernon Sullinger, City Clerk, for \$14,000 4½ per cent. 30-year water-works bonds; denomination \$500; dated Feb. 1, 1915; maturity Feb. 1, 1935.

La., Alexandria.—Bids will be received Jan. 27 for \$20,000 of school bonds, Rapides parish, in addition to issues previously noted. Address D. B. Showalter, Prest. School Board.

La., New Roads.—Bids will be received until 11 A. M. Tuesday, Feb. 2, for \$5000 of 5 per cent. 10-year school bonds of Pointe Coupee parish. Address A. McFarland, Secy. School Board.

La., Tallulah.—\$120,000 of the \$250,000 5 per cent. bonds Fifth Louisiana Levee Dist. have been sold as follows: Agnes Guthrie, \$5000; Whitney-Central Trust and Savings Bank, New Orleans, \$115,000.

La., White Castle.—No satisfactory bids were received Jan. 12 for \$60,000 5 per cent. 40-year White Castle Drainage Dist. bonds. S. M. Levy is Secy. and Treas.

Md., Annapolis.—\$3,600,000 of 4 per cent. State road bonds of 1914 have been sold by the Board of Public Works to a syndicate headed by Alexander Brown & Sons of Baltimore, whose bid was \$8.31. Other members of the syndicate are Harris, Forbes & Co., Estabrook & Co., Remick, Hodges & Co. and Brown Bros. & Co., all of New York.

Md., Cumberland.—A temporary injunction

has been issued by the Circuit Court on petition of Henry Shriver, a taxpayer, enjoining the Mayor and City Council of Cumberland and Alexander Brown & Sons of Baltimore from concluding the sale of \$150,000 of 4½ per cent. street-paving bonds at 99.41 upon the ground of irregularity. Answer must be made by July 19 as to making the injunction permanent.

Miss., Meridian.—Bids will be received until 2 P. M. Feb. 3 for \$50,000 of 5½ per cent. road bonds of Dist. No. 1 of Lauderdale county; denomination \$500; mature \$3000 annually from 1926 to 1935, inclusive, and \$4000 annually from 1936 to 1940, inclusive. Address W. R. Pistole, Clerk Chancery Court.

Miss., Vicksburg.—Bids received for \$140,000 of 5 per cent. 5-40-year Warren county road bonds were rejected. J. D. Laughlin is Clerk Board of Suprvs.

Miss., Tutwiler.—Bids will be received, it is reported, until 1.30 P. M. Feb. 2 for \$12,000 20-year water-works and sewer bonds. D. H. Jennings is Town Clerk.

Miss., West Point.—\$10,000 5 per cent. bonds will, it is stated, soon be placed on the market. D. Cottrell is Mayor.

Mo., Clarence.—\$10,000 5 per cent. 5-20-year electric-light bonds have been purchased by Wm. R. Compton Co., St. Louis.

N. C., Durham.—The city will ask authority of the Legislature to issue \$30,000 of bonds for police station, recorder's courtroom and armory. Address The Mayor.

N. C., Greensboro.—\$8000 5 per cent. Fentress Township Special Tax School Dist., Guilford county, bonds are reported sold. Address School Commrs.

N. C., Greensboro.—Guilford county will ask the Legislature for authority to issue from \$150,000 to \$200,000 of courthouse bonds. Address W. C. Boren, Chrmn., County Commissioners.

N. C., Lumberton.—W. P. Barker, Chrmn. Committee on Back and Jacob Swamp Drainage Dist. bonds, says, with reference to the possible issue of refunding bonds, that some legislation will first have to be obtained.

N. C., Lillington.—\$30,000 6 per cent. 20-year Lillington township, Harnett county, road bonds are to be taken by C. D. Riggsbee, contractor, for work done.

N. C., Reidsville.—Application is to be made to the General Assembly asking authority to vote on \$30,000 school bonds. J. B. Pipkin is Chrmn. Committee Reidsville Graded Schools.

N. C., Raleigh.—It is contemplated to issue \$100,000 of street-paving bonds. Address The Mayor.

N. C., Sanford.—\$100,000 of Lee county road bonds have been voted Jan. 16. Ralph Monger is Clerk of Commrs.

N. C., Smithfield.—The \$40,000 5 per cent. 40-year Ingram township, Johnston county, road bonds are reported sold. Address County Commrs.

N. C., Wilmington.—City Council has decided to ask the Legislature for authority to issue \$100,000 of 40-year bonds at not over 5 per cent.; also \$150,000 of municipal notes, of which total about \$80,000 is to fund the floating debt and \$170,000 for improvements, thus: \$20,000 streets, \$50,000 water-works improvements, \$50,000 water and sewer house connections, and \$50,000 sidewalks. Address The Mayor.

Okla., Drumright.—Sewer and park bonds are reported voted. Address The Mayor.

Okla., Guthrie.—Election Jan. 14 resulted in defeat of \$50,000 water-works-extension bonds.

Okla., Oklahoma City.—\$240,000 5 per cent. 25-year water bonds defeated.

Okla., Red Rock.—The \$22,000 water-works bonds to be voted on Jan. 28 are 5-25-year 6 per cents. Address The Mayor.

Okla., Yale.—\$32,000 of water-works and electric-light-plant extension bonds are voted. E. A. Pierson is Town Clerk.

S. C., Ridgeland.—\$10,000 6 per cent. 30-year Ridgeland School Dist. bonds have been purchased at par by R. M. Grant & Co., Chicago.

S. C., Woodruff.—Bids will be received, it is reported, until Feb. 10 for \$60,000 of 5 per cent. 20-40-year water and sewer bonds Address J. E. Ezell, Town Clerk.

Tenn., Benton.—Application is to be made to the Legislature for authority to issue \$75,000 Polk county funding bonds. Address County Commrs.

Tenn., Chattanooga.—Hamilton County Court has authorized an issue of \$225,000 of 5 per cent. school bonds in place of \$300,000 of 4½s which were not sold, and the Legis-

[For Additional Financial News, See Page 64.]

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JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
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Surplus and Net Profits, 450,000
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One Hundred-and-Twenty-Third Semi-Annual Statement

JANUARY, 1915

SUMMARY OF ASSETS

	Par Value.	Market Value.
Cash in Banks and Trust Companies.....	\$ 2,161,179 98	
United States Bonds.....	\$ 150,000 00	158,000 00
State and City Bonds.....	4,795,733 00	4,578,573 33
Railroad Bonds.....	10,505,000 00	9,470,540 00
Miscellaneous Bonds.....	2,907,000 00	2,740,200 00
Railroad Stocks.....	10,840,500 00	11,341,890 00
Miscellaneous Stocks.....	1,150,000 00	1,361,000 00
Bank and Trust Co. Stocks.....	139,300 00	388,175 00
Bonds and Mortgages, being 1st lien on Real Estate.....		5,500 00
Premiums uncollected, in course of transmission and in hands of Agents.....		2,857,845 96
Accrued interest.....		250,635 00
		\$35,313,539 27

LIABILITIES

Cash Capital.....	\$ 6,000,000 00*
Reserve Premium Fund.....	14,268,024 00
Reserve for Losses.....	1,554,384 79
Funds held under Reinsurance Treaties.....	437,656 32
Reserve for Taxes.....	250,000 00
Reserve for Miscellaneous Accounts due and unpaid.....	100,000 00
Reserve as a Conflagration Surplus.....	2,000,000 00*
Surplus over contingencies and all liabilities, including capital.....	10,703,474 16*
	\$35,313,539 27

Surplus as regards policy-holders.....\$18,703,474.16*

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New York, January 1st, 1915.

lature is requested to approve the higher rate of interest proposed.

Tenn., Chattanooga.—Bids will be received until 10 A. M. Wednesday, Jan. 27, for a total of \$13,987.44 of district paving bonds. T. C. Thompson is Mayor.

Tenn., Chattanooga.—Hamilton County Court has applied to the Legislature for authority to issue \$125,000 of bonds for Wauhatchie Rd.

Tenn., Dover.—Election called for Feb. 6 on \$100,000 of Stewart county roads. Address County Commrs.

Tenn., Nashville.—It is contemplated to ask the Legislature for authority to issue \$300,000 of bonds for city water-works improvement and extension. Address The Mayor.

Tenn., Nashville.—A proposition from the Board of Education that \$625,000 of municipal bonds be issued for school-building purposes is under consideration by the City Commissioners.

Tenn., Wartburg.—\$270,000 5 per cent. 20-40-year Morgan county road bonds recently reported sold were purchased at par and interest by G. W. McNear & Co. of Chicago.

Tex., Austin.—Approved by the Attorney-General: \$1000 5 per cent. 20-year school bonds Omen Dist. No. 5, Smith county; also \$1000 of 5 per cent. 40-year Meridian Dist.

Tex., Austin.—Austin School Board contemplates asking the city to vote at least \$200,000 of school bonds for new buildings and improvements. The Mayor will also, it is stated, ask the Council for \$250,000 for streets and \$25,000 for fire-alarm. A. N. McCallum is Supt. of Schools, and A. P. Woolbridge is Mayor.

Tex., Abilene.—\$45,000 street-paving bonds have been voted. Address The Mayor.

Tex., Belton.—\$105,000 5 per cent. bonds Road Dist. No. 7, Bell county, have been purchased at par by M. W. Taylor, contractor.

Tex., Caldwell.—\$136,045 5 per cent. 10-40-year Brazos River levee-construction bonds, Burleson county, voted last August, have been purchased by C. Nordstrom of Bryan and Earl Porter of Caldwell.

Tex., Cameron.—An application to cancel \$100,000 road bonds of Thorndale Dist., Milam county, has been denied by the County Commrs. Part of these are reported sold.

Tex., Clarksville.—\$20,000 of 5 per cent. 25-40-year street-improvement bonds dated July 1, 1914, were sold to J. B. Oldham of Dallas, Tex., at 100.25.

Tex., Corpus Christi.—\$300,000 of 5 per cent. 20-40-year water-works improvement bonds, denomination \$1000, are reported sold to Powell, Gerard & Co. of Chicago at par and interest.

Tex., Dallas.—Bids will be received until noon Feb. 26 for \$400,000 4½ per cent. public-school improvement bonds; dated Nov. 1, 1914; maturity Nov. 1, 1923, to Nov. 1, 1954, inclusive. Address W. T. Henderson, Commissioner of Finance and Revenue. *Further particulars will be found in the advertising columns.*

Tex., El Paso.—All bids received for the \$300,000 of 5 per cent. 20-40-year courthouse and jail bonds of El Paso county on Jan. 11 were rejected. Roy D. Barnum is County Auditor.

Tex., El Paso.—\$65,000 of school bonds of Concordia District, El Paso county, offered Jan. 11 were sold to James N. Wright & Co. of Denver, Colo., at par and interest and \$1920 commission.

Tex., Fort Worth.—Petitions are being signed asking the Tarrant County Commrs. to order an election for an issue of bonds to build a new jail. Address Jesse M. Brown, County Judge.

Tex., Houston Heights.—City proposes to issue \$100,000 sanitary sewer bonds. Address The Mayor.

Tex., Magnolia Park (P. O. Houston).—Bids will be received until 11 A. M. Feb. 5 for \$94,000 of water-works bonds, 5 per cents, 10-40-year; denomination \$500. John B. York is City Attorney of Magnolia Park, Prince Theater Bldg., Houston. *Further particulars will be found in the advertising columns.*

Tex., Magnolia Park (P. O. Houston).—Bids will be received until 11 A. M. Feb. 5 for \$40,000 of street-improvement bonds, 5 per cents, 10-40-year; denomination \$500. John B. York is City Attorney of Magnolia Park, Prince Theater Bldg., Houston. *Further particulars will be found in the advertising columns.*

Tex., Mineral Wells.—\$100,000 precinct road bonds have been purchased by Natt T. Wagner of Wichita Falls, Tex.

Tex., Paris.—\$300,000 5 per cent. \$500 Lamar county road bonds voted last April have been purchased by the City National Bank of Paris at par and interest.

Tex., Port Lavaca.—It is proposed to issue bonds for drainage and street improvements. Address Chas. H. Boyd, Chrmn. of Committee.

Tex., San Benito.—Election Feb. 2 on \$8000 of 6 per cent. 10-40-year city bonds, of which \$5000 are for sewer and \$3000 for street improvements. Denomination \$1000. Bruce Frazer is City Secy.

Tex., Sherman.—Election is to be held Feb. 20 in Road Dist. No. 2, Grayson county, to vote on \$10,000 bonds. Address County Commissioners.

Tex., Temple.—\$40,000 of 5 per cent. 20-40-year school bonds voted last summer will, it is reported, soon be offered for sale. Address The Mayor.

Tex., Wharton.—\$300,000 of 5 per cent. 40-year road bonds of Dist. No. 1, Wharton county, have been bought by the Wharton National Bank at 95; denomination \$1000 each.

Tex., Wichita Falls.—A vote is reported taken on a proposed issue of \$45,000 of street-improvement bonds. Result not yet announced.

Va., Blacksburg.—Election called for Feb. 23 on \$4000 of 6 per cent. 10-15-year school bonds; also on \$4000 of sewerage-plant bonds. Address Judge W. W. Moffett, Circuit Court.

Va., Christiansburg.—Bids will be received until noon Feb. 23 for \$35,000 of 4 per cent. 20-30-year road-improvement bonds of Montgomery county; denomination \$500; Geo. W. Wilson is Clerk Board of Supervisors. *Further particulars will be found in the advertising columns.*

Va., Clintwood.—\$32,000 5 per cent. 1-30-year bonds Kenady Magisterial Dist., Dickinson county, are being offered. Address County Treas.

Va., Dayton.—Election Jan. 19 has been postponed to Feb. 16 on \$24,500 of sewer, light and power bonds because of error in amount, it having been given as \$30,000. Address The Mayor.

Va., Eastville.—Bids will be received until noon Feb. 1 for all or any part of \$5000 of 5-30-year \$500 Franktown Magisterial Dist., Northampton county, road bonds. George T. Tyson is Clerk Board of Supervisors at Eastville.

Va., Fairfax.—\$50,000 of Fairfax county road bonds of Providence Dist. have been voted. Address J. B. T. Thornton, Circuit Court.

Va., Jonesville.—\$30,000 of Rocky Station Magisterial Dist., Lee county, bonds are being offered. Address County Commrs.

Va., Petersburg.—Board of Aldermen has voted to issue \$100,000 of 4½ per cent. school-building bonds. Address The Mayor.

Va., Roanoke.—The \$100,000 school bonds soon to be voted on are 4½ per cents. Address The Mayor.

W. Va., Fulton.—\$30,000 5 per cent. 10-25-year Washington County Dist., Ohio county, school bonds have been purchased at 100.135 by the Hanchett Bond Co., Chicago.

W. Va., Huntington.—\$300,000 of 5 per cent. school bonds are reported sold at par, interest and a premium of \$7566 to the Fifth-Third National Bank and Breed, Elliott & Harrison of Cincinnati, jointly.

W. Va., Parkersburg.—Election Feb. 11 is for \$250,000 of 5 per cent. 10-34-year district school bonds dated June 1, 1915; denominations \$100, \$500 and \$1000. C. E. Van Deverder is Pres. School Board.

W. Va., Parkersburg.—Election is called for Feb. 2 on \$200,000 of 5 per cent. 10-year paving, curbing, sidewalk and sewer bonds; denominations \$100, \$500 and \$1000. W. H. Smith, Geo. E. Work, Edward Nelly and Chas. A. Bukey are appointed commissioners to sell the bonds. Allen C. Murdoch is Mayor and Frank Good City Clerk.

FINANCIAL NOTES

Portsmouth, Va., has arranged to borrow \$200,000 of Cincinnati bankers.

The annual convention of the Florida Bankers' Association is to be held at Palatka, Fla., March 26 and 27. Henry G. Aird is Pres.; George R. De Saussure, Secy. and Treas., and Giles L. Wilson, Chrmn. Executive Committee, all of Jacksonville.

The total bonded debt of Alabama is \$9,057,000, according to a report published at Montgomery. It consists of \$7,137,000 of 4 per cent. Class A renewal bonds, \$966,000 of 3½ per cent. Class C renewal bonds and \$954,000 of 4 per cent. funding bonds.

THINK IT OVER THEN ACT

You wouldn't think of trying to withhold from your landlord the rent which is his due, nor would you attempt to hold back your just share of taxes upon the home which you own. You recognize your obligations to other people and you meet them promptly, but are you square with yourself? You know what Polonius said to Laertes: "This, above all, to thine own self be true." The rest is easy, and the reason for it is that fairness to one's self is basic; all the rest hinges on that.

You thought you were fair to yourself, didn't you? Have you set aside a certain sum of money, at least in your own mind, that you expect to spend this year for business publications; for papers that will help you in your work; for magazines that will stimulate you; give you ideas; increase your effectiveness in your own organization; in your own business or profession? Is it a very small per cent. of your income? If so, then you are not being fair to yourself. You are not doing yourself justice.

Why shirk? Why not face the fact that whatever may have been customary or necessary at one time, in these days it is vitally important that you, as a progressive business man, know what other leaders in business are doing; that you get the gist of the news of the week in such shape that you can apply it to your own problems.

Have you included in your plans for 1915 a sufficient expenditure for journals of information which will enable you to do better this year than you did last; to make a better showing during the next twelve months, all things considered, than you have done heretofore? If you have not, then you are unfair to yourself.

You Can't Begin Too Soon—Start Now

Have you a penchant for economy? We want to encourage it. The price of the Manufacturers Record is \$4.00 a year, but we are going to help you save. We can save you \$4.00 or \$2.00, whichever you may elect. The cost of three years' subscription to the Manufacturers Record is \$12.00. We will give it to you for that period for \$8.00. This plan keeps us from having to write you about renewal every year and it encourages your good work, so it's a good thing for both of us. We will give you two years' subscription for \$6.00, if for any reason you want to start off modestly and save only \$2.00 in a lump.

This Special Offer is subject to withdrawal without notice

The MANUFACTURERS RECORD is not only a high-class weekly newspaper, keeping its readers closely in touch with everything that pertains to the material welfare of the South; it is a sort of "Family Bible" for the South as well. You know what we mean—it helps you get back in the right track, when you are tempted to be led astray by false economic theories, by misleading reports, by discouraging situations. The Manufacturers Record sets you right. After you get into the habit of reading it, you will wonder how you got along without it so long. It is never too late to reform, but the earlier you take action the more you have to show for it.

Something Is Due You

SUBSCRIBE NOW

AND GET IT

Classified Opportunities

MEN WANTED

AGENTS WANTED among supply dealers and salesmen for an exceptional house-lighting machine, suitable for small homes as well as large; simple, durable, economical; satisfaction guaranteed to customers; has excellent selling points; a live proposition. Write for terms. The Alexander N. Milburn Co., Baltimore, Md.

WANTED—An experienced man to take charge of office in a manufacturing and jobbing business; must be a good correspondent with executive ability and judgment; need not be technical in the manufacturing end; exceptional opportunity for right man of demonstrated ability. Clerks and bookkeepers need not apply. Address No. 1685, care Manufacturers Record, Balto., Md.

EXPERT METAL WORKER wanted to take charge of tank department of prosperous corporation with bright future; prefer that he take small financial interest in the business. Good salary and dividends assured. No. 1682, care Manufacturers Record, Balto., Md.

SALESMEN acquainted with large mill and factory owners, to sell high-grade line of paints; commission basis; leads furnished; exclusive agency to right parties. Address No. 1681, care Manufacturers Record, Balto., Md.

WANTED—Experienced manager who will buy \$10,000 stock in woodworking company which has about \$60,000 invested; new, modern, well-equipped plant with good business. Address J. C. Braswell, President Rocky Mount Sash & Blind Co., Rocky Mount, N. C.

AGENCIES WANTED

WE ARE prepared to take on one or two additional agencies for New York and vicinity. We are a going concern, with salesmen calling regularly on contractors, shops and factories. We are interested in machinery, tools and equipment. Only articles of merit will be considered. Apply to the United States Purchasing Corporation, Woolworth Building, New York City.

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

MANUFACTURERS wishing to place their goods in Texas through salesmen covering State may submit propositions to us with all details for consideration. W. Y. Rockwell & Company, Manufacturers' Agents, Suite 712 Wilson Building, Dallas, Texas.

WE WANT to get in touch with manufacturers of agents' specialties for mail-order business. W. Y. Rockwell & Company, 712 Wilson Building, Dallas, Texas.

MANUFACTURERS' AGENT wants to represent good live concern in Western New York; first-class references. Address P. O. Box 867, Buffalo, N. Y.

SITUATIONS WANTED

EXPERIENCED STONE MAN open for position as manager, superintendent, draughtsman or salesman; experienced in handling quarry operations, manufacturing and selling paving and crushed stone, and in figuring drawings, making diagrams and setting plans for cut stone work and superintending the getting out and erecting of same; at present employed, but desires to make change. Address No. 1683, care Manufacturers Record, Balto., Md.

KAOLIN AND CHINA CLAY MANAGER, 20 years' experience, wishes position; familiar, and competent to develop mine and prepare this commodity at lowest cost; best of references. Address No. 1663, care Manufacturers Record, Balto., Md.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

OFFICE DEVICES

FOR SALE—New and second-hand office machinery and labor-saving devices of all kinds and makes. We offer some exceptional bargains at present. Collins & Company, 1324 Arch Street, Philadelphia, Pa.

MODELS

MODELS MADE FOR INVENTORS.—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 300 lines, 16c. per line; 500 lines or more, 15c. per line.

MANTLE AND TILE FLOORS

NORTHCROSS WOOD MANTELS AND TILE FLOORS for every purpose. Sold direct from factory to your home. All orders receive prompt attention. Every contractor should have a copy of our new catalog showing the largest line in America. Mailed free. W. J. Northcross Mantel Company, 73 Union Ave., Memphis, Tennessee.

BUSINESS OPPORTUNITIES

PRACTICAL MINING MAN desires to invest services and some cash with someone having a small coal proposition; several years' experience as mine foreman, mine superintendent, and mining engineering. No. 1676, care Manufacturers Record, Balto., Md.

SPANISH YOUNG MAN, with own office downtown, can spare few hours daily to attend to any business, either foreign or domestic. Only a very small amount weekly to cover part of actual expenses. Address P. O. Box 2110, New York City.

I HAVE an unusually good land-development proposition to offer a responsible party who can supply \$10,000 for working fund. Chas. B. Harman, Gainesville, Fla.

FOR SALE—One of the finest mineral springs properties in mountains of Virginia; tract contains 250 acres. Big demand for hotel. H. M. Lewis, Staunton, Virginia.

MANUFACTURERS of household and office specialties will please communicate with us. Texas Mail Order Supply Company, Dept. A, Wilson Building, Dallas, Texas.

TO BUY ENGINEERING BUSINESS.—C. E. of ten years' experience will buy engineering business or a working interest therein. Your proposition will be kept confidential. Address No. 1688, care Manufacturers Record, Balto., Md.

WANTED—Party to invest \$5000 and take active part in new cotton mill. Address Box 485, Easton, Md.

FOR SALE—Water and light plant in growing town of 3000 in Southwest Ala.; will also consider selling ice plant in connection with water and light plant. Best of reasons for selling. For particulars apply to E. P. Kimbrough, Greensboro, Ala.

\$500 WILL START YOU IN BUSINESS with \$1000 worth of stock, bringing \$75 to \$100 clear profit weekly. Exclusive territory. Patent adjustable form units for all kinds of concrete work. Our \$150 culvert outfit makes 150 different sizes and shapes of forms, while ten of these sizes in another make cost \$713. Is it any wonder ours sell? Act quick before your territory is taken. Frick Manufacturing Co., Fricks, Pa.

WANTED—Acreage, farm, city or town property, suitable for subdivision into small farms or lots. Land brings more when cut up and handled by our up-to-date methods. We are fully equipped to subdivide and sell real estate at auction on commission in all parts of the United States. We turn real estate, residence lots or farms into cash quickly. We are also in position to negotiate exchanges of Washington city investment properties for farm, timber or residence property anywhere in the United States. Write us. Our representative will inspect your property. National Real Estate and Auction Company, 1024 Woodward Building, Washington, D. C.

WE ARE CONSULTING ENGINEERS backed by a competent staff and a modern machine plant that can save you money if you are interested in designing or building special machinery, special tools, experimental work, models, etc. If you have patented an article which is not perfected, a consultation with our expert mechanic is at your command. We are giving attention to developing patents and marketing patented articles, especially labor-saving appliances. Our list of office appliances is available. We invite correspondence and will give estimates promptly and cheerfully. Specialty Manufacturing-Sales Corp., Norfolk, Va.

HOTEL FOR SALE OR LEASE

FOR SALE OR LEASE—New 20-room hotel at Seminole Beach, a summer and winter resort; modern fixtures; a chance to make money for live party. For particulars see M. E. Sparrow, 1411 Morgan St., Tampa, Fla.

FACTORY SITES

FOR SALE—Desirable Manufacturing Site, 150x500 feet. Rail and Water facilities best in State. I will exchange value for preferred stock. W. E. Veasey, Havre de Grace, Md.

BALTIMORE FACTORY AND TERMINAL SITES.—Statement of Asa G. Candler, President The Coca-Cola Co.: "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements. Wm. Martien & Co., 3 N. Calvert St., Baltimore, Md.

INDUSTRIES WANTED

COTTON FACTORY

WANTED—COTTON FACTORY.—This city has a large building which could be converted into a splendid cotton factory. Would like to hear from parties interested. Address Business Manager, Marion Association of Commerce, Marion, Indiana.

INDUSTRIAL PLANTS FOR SALE

IRON AND WIRE WORKS

FOR SALE—Established ornamental-iron and wire works in city of 130,000 inhabitants, doing \$10,000 business yearly; no opposition; reasons for selling; retiring. Quick action desired. San Antonio Wire and Iron Works, San Antonio, Tex.

MANUFACTURING PLANT

FOR SALE—In Baltimore, a plant suitable for manufacturing, cold-storage or storage warehouse, equipped 60 H. P. engine, 3 boilers, 35-ton ice machine, 17 cold-storage closets, 25,000 ft. floor space, Penna. R. R. switch. Chas. E. Ecker, 1307 Munsey Bldg., Balto., Md.

FURNITURE FACTORY

FOR SALE—On easy terms, a \$30,000 furniture manufacturing plant with from \$20,000 to \$25,000 worth of raw and manufactured materials. Has a good established business. The man or firm that understands the furniture manufacturing business can secure a bargain. If interested, address Lock Box 608, Oxford, N. C.

MACHINE SHOP

FOR SALE—A complete machine shop, located in Central Florida, healthiest place in United States, consisting of a full line of machine tools, buildings, real estate, etc., on junction of two railroads, with private siding. Price, \$5000; one-third cash; balance on easy terms. Would consider a long-term lease. For full particulars write owner, M. T. Anderson, Box 91, Apopka, Fla.

MISCELLANEOUS

FOR SALE—A complete brick plant in good condition with capacity of 20,000 brick per day.
1 short log sawmill.
1 25-bbl. flour mill in brick building.
1 75-bu. corn mill in brick building.
1 corn and cob crusher.
The Flour Mill is kept going practically the year round. Price \$10,000, \$4000 cash, balance in three equal annual installments. Address Central Realty Co., Richmond, Va.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

\$2.75 AN ACRE—TIMBER AND GRAZING LANDS.—Forty-eight hundred, sixty-six hundred forty, and twenty-five hundred acres in Southeastern Oklahoma; near oil pipe lines; good oil and mineral prospects; Government title. Some cash; some terms; no trades. M. E. Williams, McAlester, Oklahoma. Established fifteen years. Reference, any bank.

FOR SALE—Dividend-paying orange, grapefruit and pineapple groves, high-class town lots, town and river-front modern residences, stock farms, colonization tracts. Price \$3, \$3.50, \$5.50, \$6, \$10 and \$20 per acre. Pine, cypress, oak, gum and poplar timber tracts and timber lands and coal tracts. Write us your wants. Waters Realty Co., Walton, St. Lucie County, Florida.

FOR SALE—1500 Southern farms, suburban homes and timber tracts. Write for free catalogue describing same. Unprecedented opportunities. Johnson's American and Foreign Real Estate Exchange, 926 Pennsylvania Ave., Washington, D. C.

WILL EXCHANGE for farm, timber, coal or large acreage the following properties:
Large apartment downtown section, rented at \$25,960 per annum. Subject to 30% incumbrance, showing a net income of \$14,025. Clear of all expenses. Price \$300,000.

Also three-story steel-constructed apartment. Subject to 33% incumbrance, showing an annual income of \$576. Price \$60,000.
Three large apartments in Boston, Mass., one showing a gross income of \$22,176 and a net income of \$11,100. Price \$222,000. And one rented at \$11,000 per annum and showing a net income of \$3890. Price \$112,000. Also another apartment showing an income of \$10,200 per annum and a net income of \$4561. Price \$105,000. Can trade the last three properties in one deal or separate.

I have all kinds of real estate for sale or exchange everywhere. Wanted all kinds of real estate for sale or exchange.
Arthur M. Connor, 223-24 Oxford Bldg., Washington, D. C.

FOR SALE—10,500 acres fine agricultural, stock, timber and coal land; well watered; practically level; railroad through property; must sell quick to wind up an estate. A fortune here for someone. Write A. E. Carter, Knoxville, Tenn.

INDUSTRIAL LANDS IN SOUTHERN STATES.—Coal, timber, iron, oil and gas lease; 25,000 acres coal Winston county, Ala., extra grade, two and three seams, \$10. Industrial Real Estate Company of the South, Wood, Ala., and elsewhere.

KAOLIN AND FELDSPAR

LOOK! LISTEN!—You electrical people, tile manufacturers, paper glaziers and potters, write me for samples kaolin or feldspar; have large deposits; also talc. D. H. Dent, Roanoke, Va.

PEBBLE PHOSPHATE

FOR SALE—1200 acres pebble phosphate in Polk county, Florida, on R. R.; guaranteed two million tons; analysis averages 72% per cent. B. P. L. Average overburden 25 ft. A bargain if taken at once. Address Geo. C. Barton owner, Lakeland, Florida.

ROCK PHOSPHATE

FOR SALE—One of the best deposits of hard rock phosphate that can be bought in the State of Florida. Analyses from samples taken from wells one to fifteen, inclusive, show an average of bone phosphate of 81.39%, iron and alumina 2.35%, sand and 1.95%. Now is the time when phosphate lands can be acquired for so much less than ever will be the case in the history of the industry, and men of means and of foresight that will take advantage of the situation will profit enormously. This deposit has recently been prospected and estimated to have not less than 500,000 tons of high-grade rock, which can be bought cheap if sold at once. Harrison & Baskin, Clearwater, Florida.

GRANITE QUARRY

FOR SALE—Developed North Carolina gray granite quarry; also, complete quarrying and cutting plant. A bargain a/c estate. Address No. 1672, care Manufacturers Record.

COAL LAND FOR SALE

FOR SALE—10,568 acres of coal lands in southwestern Indiana; two or three underlying veins, deepest about 80 feet, which is from 5 to 7 feet in thickness; top very suitable for stripping; best steam coal in the United States; must be sold by February 15, 1915. Price low. Address L. E. Fricke, North Side Bank, Evansville, Ind.

FOR SALE—In Birmingham district, "soft coal," 8 miles west of Bessemer, Ala., on L. & W. R. R.; 1000 to 2000 acres in body; 2 or 3 workable seams of coal, one faced up 4 ft. 8 in. It's one of the best bodies of coal in Ala. W. D. Bush & Co., Brighton, Ala.

FOR SALE—Cheap coal and mineral lands in Birmingham district; large and small tracts; best investments for present or future developments. S. M. Meigs, Bessemer, Ala.

COAL AND TIMBER LANDS

FOR SALE OR EXCHANGE—24,000 acres of coal and timber land, located on the Frisco R. R. west of Birmingham, Alabama. Address H. H. Wefel, Jr., owner, Mobile, Ala.

75,000 ACRES best Tennessee coal and timber land; not mountainous; timber can be rafted to railroad which will soon be built through property; title perfect. Price \$5 per acre. Box 929, Richmond, Va.

TIMBER LAND FOR SALE

VIRGIN HARDWOOD TIMBER FOR SALE.—Along the new C. & O. Ry., in Dickinson county, Virginia, about 8000 acres finest boundary in every respect to be found in this section. Prices reasonable. Write C. O. Ramsey, Coeburn, Va.

TIMBER FOR SALE

FOR SALE—40,000,000 feet of good timber, with sawmill and complete outfit; very low freight rates to Gulf ports; very cheap and on easy terms. James A. Terry, Mobile, Ala.

Classified Opportunities

FOUR MILLION FEET OF PINE TIMBER, 12 miles south of Mobile, on two railroads and water. Price \$3 per thousand. C. N. Pooley, 1016 Springhill Ave., Mobile, Ala.

FOR SALE—Hardwood timber on 5000 acres of mountain land immediately on railroad; principally oak, chestnut, hemlock and poplar; pay for us cut and sold. Address North Carolina Lumber & Mining Co., Hewitts, N. C.

REAL TIMBER BARGAIN—50,000,000 ft. 70% N. C. pine, poplar and cypress, all original growth; on Southern R. R. in South Carolina. Liberal terms and low price. J. P. Muirhead (owner), Augusta, Ga.

LUMBER FOR SALE

WE HAVE IT—Oak, maple and walnut lumber; dry. T. C. Peasley, Amherst, O.

STOCK FARM

FOR SALE AT BARGAIN—10,000 acres, located in Baldwin county, Alabama, especially adapted for stock ranch, as same is covered with a luxuriant growth of our native grasses. Terms very reasonable; in fact, would require no cash if parties buying would fence and stock same and pay me interest on the purchase price. Address H. H. Wefel, Jr., owner, Mobile, Ala.

COLONIZATION LANDS

FOR SALE ON REASONABLE TERMS—25,000 acres, located in South Alabama, especially desirable for a colonization proposition, as land begins within half mile of a very thriving town, and no portion more than four or five miles from a railroad. Address H. H. Wefel, Jr., owner, Mobile, Alabama.

NURSERY STOCK

\$10,000 WORTH OF NURSERY STOCK GIVEN AWAY—To introduce our high-grade, true-to-name, sure-to-bear, easy-to-sell fruit trees, we are offering for sale 1000 shares of stock of \$10 each, and with each share of stock we give a bond good for \$10 in nursery stock. Applicants must be white, reliable, and owners of real estate. Write today. Wills Valley Nursery Company, 902-3-4 Jefferson Co. Bank Bldg., Birmingham, Ala.

FRUIT, FARM AND TRUCK LANDS

ALABAMA

GOOD INVESTMENT—We offer for sale 13,000 acres of best farm, fruit and stock-raising land in solid body, situated only a short distance from Bay Minette in Baldwin county, Alabama.

This land lies well, being level to slightly rolling, with several streams of running water through the tract, making it very desirable for colonization purposes.

This tract can be purchased for the low price of \$7 per acre. Will arrange terms. T. L. Moore & Co., Room 109 Masonic Temple, Mobile, Alabama.

SATSUMA ORANGE, FIG, PECAN LANDS **FOR SALE**—Improved or unimproved. Any acreage desired. Mobile and Baldwin counties, Alabama. Jas. A. Lewis & Son, 52 St. Francis St., Mobile, Ala.

BEAUTIFUL SUBURBAN HOME, 6-room house, barn, outbuildings, about 6 acres land, on street-car line; ideal for truck farm; can be bought cheap for cash. Write for particulars. M. J. Hindman, Tusculumbia, Ala.

FLORIDA

FREE—William L. Larkin's booklet, "The Truth About Florida," with a six-months' subscription (at one-half regular rates) to The Indian River Farmer. Fruit growers, truckers, general farmers, folks interested in Florida, send 25c. to The Indian River Farmer, V-1, Vero, Fla.

THE PALATKA FARMS COMPANY of Palatka, Florida, offers to homeseekers the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Beck, Palatka, Fla.

10 AND 20-ACRE FARMS in citrus and trucking centers in the highlands along Apopka River, So. Central Fla.; \$12 per acre cash, \$1 per acre per month; no taxes or interest. Will also improve land and send free literature on request. Adjoining groves valued more than \$1000 per acre. P. O. Box 486, Arcadia, Fla.

FLORIDA SUBURBAN HOME with 30 acres of good land, 20 in orange and grapefruit trees, with 15 acres bearing. One-half mile from the Gulf, 10 minutes' walk from business center of growing town of Dunedin, on the Tampa rock road. Price \$20,000; terms. B. C. Bass, Dunedin, Florida.

FOR SALE—50,000 acres in St. Lucie county, Florida; 20,000 acres in Manatee county; 30,000 acres in Lake county; 6240 acres in Polk county, all well located; excellent colonization tracts. Address P. F. Quinn, Vinton, Iowa.

FOR SALE—From 10 to 10,000 acres choice DeSoto county, Florida, cut-over pine lands. Soil suitable for citrus fruits or vegetables. Close to railroads. Particulars on request. Address Owners, P. O. Box 5, Limestone, Fla.

TEN AND TWENTY-ACRE TRACTS sold on long time; combination soil; orange and truck land; \$5 per acre down, \$1 per acre per month, payable quarterly; raise oranges, grapefruit, strawberries, vegetables and chickens; no tree-killing frosts; flowing wells; healthful climate year round. Write for free booklet. West Coast Realty Co., Inc., Sarasota, Florida. Dept. K.

LOUISIANA

FOR SALE—A sugar plantation containing 1250 acres, 800 of which are in cultivation of cane and corn. Have 40 head of mules, implements, etc. Land contains large homes for owners, cabins, stables, barns, and everything complete for operation of one of the finest pieces of land in Louisiana. Railroad through property. For particulars relative to price and terms address No. 1679, care Manufacturers Record, Balto., Md.

NORTH CAROLINA

FOR SALE—35 acres or more, 5 miles from city of Hickory; good seven-room dwelling; large barn, and plenty of running water; good orchard. P. L. Cloninger, R. F. D. No. 2, Hickory, N. C.

FOR SALE—On Slocumbs Creek, my beautifully situated home, with 550 acres of land. An ideal place for a Northern hunting club. Come and see what there is in Eastern North Carolina. William Buys, Havelock, N. C.

TEXAS

OWN A SMALL-FARM HOME in the Gulf country, suburban to Houston, Texas, the coming great city of the South. Small cash payment gives possession; small monthly payments pay it out. No interest. No taxes. Big return for those who buy now. Write for free illustrated folder. C. W. Hahl Co., Inc., 504 Com'l Bank Bldg., Houston, Tex.

VIRGINIA

A BARGAIN—357 acres, 150 cleared; 500,000 ft. timber; land rolling, not hilly; and good, nice 11-room house and suitable outbuildings; fruit; abundant water. Only \$5500; easy terms. Southern Farm Agency, Lynchburg, Va.

THE best agricultural and stock farm of 2700 acres in Eastern Virginia, on navigable tidewater, including 1700 acres of fine timber; brick barns, etc. Green & Redd, Richmond, Va.

VIRGINIA ESTATES—Colonial homes, plantations, farms, suburban homes, Albemarle pippin orchards, timber lands. Write us for what you want. We have it. R. N. Flanagan & Co., Charlottesville, Va.

VIRGINIA FARMS—Fine blue grass, grain and dairy farms in the heart of the Piedmont section of Virginia, Culpeper, Fauquier and adjoining counties. Ask for catalogue. The L. M. Allison Co., Real Estate Brokers, Remington, Va. Established 1895.

VIRGINIA FARM FOR SALE—304 acres, 2½ miles from Gordonsville; first-class stock farm; natural growth bluegrass; best apple section; high-grade improvements, including modern dwelling, and dairy barn housing sixty head. Vaughan-Whitehurst Co., Inc., Richmond, Va.

FINANCIAL

AN UNUSUAL OPPORTUNITY to secure an interest in a splendidly equipped operation in the Pocahontas field, working the original No. 3 seam, 5 feet thick. The management is in the hands of the wealthiest and most successful operators in the field. Over \$400,000 has been spent on the improvements, and the works have never lost a day for want of orders. The large stockholders and directors represent a tonnage of several millions annually and a wealth of many millions of dollars.

Particulars as to the directors and stockholders will be furnished to bona-fide interested parties.

The unusual conditions prevailing for the past year compels the owner (a non-resident) to sacrifice the stock, which will be sold for \$50 per share, par value \$100, and it cost that. Terms easy; \$10 per share down and \$10 per share per month. Certificates in one-share lots or any number. Brokers protected. Address No. 1684, care Manufacturers Record, Balto., Md.

PATENT ATTORNEYS

PATENTS—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in his prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

C. L. PARKER, Patent Lawyer, formerly member Examining Corps U. S. Patent Office, 324 G St., Washington, D. C. Patents secured. Patent suits conducted. Reports on the patentability of inventions, the scope and validity of patents, and whether any process or machine infringes existing patents. Reference to prominent manufacturers and pamphlet of instructions furnished upon request.

PATENT YOUR IDEAS—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F St., Washington, D. C.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.



Why Put a New Fuse Into the Circuit Every Time You Have a Blowout?

Cut annual fuse maintenance 80% and secure positive electrical protection under all conditions.

ECONOMY RENEWABLE CARTRIDGE FUSES

When an Economy fuse blows, you don't throw it away—you simply insert a new renewal element and have virtually a new fuse. 25 blowouts of an ordinary non-refillable fuse (100 Amps, 250 Volts) cost \$10.12½, while 25 blowouts of an ECONOMY renewable cartridge FUSE of the same capacity cost \$2.10—and remember Economy fuses give absolute protection—they do not vent fire nor hold a sustained arc. They are the only renewable fuses uniformly rated. Economy fuses meet the performance specifications governing the use of such devices.



Why spend four times more than necessary in fuse maintenance? Write today for Bulletin M. R.—and list of prominent satisfied users.

Two renewal elements furnished free with each Economy fuse. Figure the saving yourself.

Economy Fuse & Mfg. Co. Kinzie and Orleans Sts. CHICAGO

OFFICIAL BANKRUPTCY SALE

Under and by virtue of orders of the Court of Bankruptcy of the United States for the Southern District of Georgia, the undersigned, Trustees in Bankruptcy of the Estate of The Gray Lumber Company, will expose and offer for sale to the highest and best bidder, before the Courthouse door at Douglas, Coffee County, Georgia, on the first Tuesday, being the 2d day of February, 1915, between the legal hours of sale, all of the property of said The Gray Lumber Company, Bankrupt, real and personal, and all its rights, claims and choses in action; and all its interest in the Ocala, Pinebloom & Valdosta Railroad, first offering and selling certain timber leases on 4670 acres of land in Coffee, Clinch and Berrien Counties, and then offering and selling the remainder of said properties, as an entirety, consisting, in general, of sawmill and planing mill plants located at Lelinton, Ellenville and Pinebloom, in Coffee County, Georgia; 6341 acres of land claimed in fee simple in Coffee, Clinch and Berrien Counties; the timber leases on 9279 acres of land, more or less, in Coffee, Clinch and Berrien Counties; ten miles of 30 and 40-pound rail in connection with said sawmill operations and two locomotives appertaining thereto. Also, the Ocala, Pinebloom & Valdosta Railroad, extending from Pinebloom to Lax, in Coffee County, Georgia, a distance of ten miles, of 40 and 50-pound rail, and one locomotive belonging to said railroad; and also all of the houses, appurtenances and structures pertaining to the sawmill plants hereinbefore mentioned, and all other property, real and personal, of whatever kind and description, and wherever located. Reference is had to an inventory in detail filed with the Referee in said cause, Hon. A. J. Crovatt, at Brunswick, Ga., each of the Trustees, and G. W. Davis, Willacoochee, Ga., and intending purchasers may obtain copy of such inventory by addressing Wm. B. Stillwell, Savannah, Ga. Said sale to be had subject to the lien claim of Henry Talmadge & Company amounting to approximately \$45,650, to the deed to secure debt on certain property held by the Merchants and Farmers' Bank of Willacoochee, approximating \$400, and the purchaser will take the property also subject to outstanding taxes, including 1914, on all of the property aforesaid, approximating \$4600. The successful bidder will be required to pay unto the undersigned on the day of sale, in cash or acceptable certified check, 10 per cent. of the amount of his bid, the balance on confirmation of said sale.

Terms of sale: Cash, purchaser paying for title.

WM. B. STILLWELL, Savannah, Ga.
L. J. COOPER, Waycross, Ga.
J. S. WRIGHT, Brunswick, Ga. } Trustees.

PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

GOVERNMENT PROPOSALS

FORT MYER, VIRGINIA, January 14, 1915.
Sealed proposals in triplicate for construction of a Quartermaster Corps Barrack and a three-set Non-commissioned Officers' Quarters at Fort Myer, Va., will be received here until 11 A. M. February 11, 1915, and then opened. Information furnished on application. Envelopes containing proposals should be indorsed "Proposals for Construction of Buildings" and addressed Quartermaster.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., January 8, 1915. Sealed proposals will be opened in this office at 3 P. M. February 20, 1915, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States postoffice at Covington, Tenn. Drawings and specifications may be obtained from the custodian of site at Covington, Tenn., or at this office, in the discretion of the Supervising Architect. O. Wenderoth, Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., January 5, 1915. Plans and specifications are now approaching completion for a central heating, lighting and power plant, to be erected in this city under the direction of this office. These plans and specifications will be ready for delivery on or after January 15. Bids may be submitted for the entire work or for any one of the following sections: Power plant building, complete, with steel stacks; boiler; generating apparatus; pumping equipment; condensers; coal and ash handling apparatus; steam and water piping; switching gear; tunnels; substation apparatus, etc. Prospective bidders should immediately submit to this office applications for plans and specifications, stating the portions of the work upon which they desire to bid. If it appears that the applicant is in a position to bid on all of the work or upon the entire work, the plans and specifications will be forwarded. No plans or specifications will be furnished sub-bidders or others not in a position to submit a bid on all of the work comprised in at least one section. The Department will be able to allow only about 15 days for the preparation of estimates. At the time plans and specifications are forwarded to bidders the date for the opening of bids will be stated, and this date will not be extended. O. WENDEROTH, Supervising Architect.

BOND OFFERINGS

\$400,000 City of Dallas 4 1/2% Gold Coupon Public School Improvement Bonds

TO BE SOLD FRIDAY, FEBRUARY 26, 1915.

Sealed bids will be received by the City of Dallas, Texas, until twelve o'clock noon Friday, February 26, for \$400,000 4 1/2 per cent. Gold Coupon Bonds.

The bonds are issued by the City of Dallas, Dallas County, Texas, under authority of Article 619 of the General Laws of the State of Texas, and of the Charter of the City of Dallas, and by special authority of the vote of the people of the City of Dallas at an election held Tuesday, April 7, 1914. The bonds are authorized for the purchase of grounds and the erection of school buildings thereon in the City of Dallas. They are in denominations of \$1000 each. Interest is payable semi-annually on May 1 and November 1, both principal and semi-annual interest payable in gold coin at the Chase National Bank in the City of New York.

The bonds are dated November 1, 1914, and are payable as follows: \$10,000 on November 1, 1923, and \$15,000 on November 1 each year thereafter up to and including November 1, 1954—average time, 27 years.

Direct tax levies have been made in sufficient amounts to provide interest and the required sinking funds to retire the bonds as they mature.

The bonds are engraved under the supervision of and certified as to genuineness by the Dallas Trust and Savings Bank of Dallas. They have been approved by the Attorney-General of the State, registered by the State Comptroller, and the opinion of Messrs. Dillon, Thomson & Co. of New York, relative to the validity of the bonds, will be furnished to the purchaser.

The City of Dallas has been incorporated by special Charter for a period of more than thirty years, and at no time in its history has there been any default in the payment of any interest or principal on its bonded debt or otherwise.

The Attorney-General of the State of New York has approved City of Dallas bonds as legal investments for the savings banks of the State of New York.

A certified check for 2 per cent. of the face value of the bonds bid for, payable to W. T. Henderson, Commissioner of Finance and Revenue, must accompany each bid. Money to be paid and bonds to be delivered at Dallas. The City of Dallas reserves the right to reject any or all bids.

For further information and financial statements address

W. T. HENDERSON,
Commissioner of Finance and Revenue, Dallas.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

Notice of Sale of Special Road and Bridge District No. 5 Bonds

Notice is hereby given that the Board of County Commissioners of the County of DeSoto, Florida, will receive sealed bids at the office of the Clerk of the Circuit Court, Arcadia, Florida, until 2 o'clock P. M. on the 2d day of February, A. D. 1915, for the purchase of bonds of Special Road and Bridge District No. 5, authorized and issued by the said Board of County Commissioners for the said Special Road and Bridge District No. 5 in the sum of three hundred and fifty thousand dollars.

The entire bond issue of three hundred and fifty thousand dollars, coupon form, is hereby offered for sale; the same are issued in denominations of five hundred dollars each, bearing date of the first day of October, A. D. 1914, maturing thirty years after date, bearing coupon form interest at the rate of 6 per cent. per annum, interest payable semi-annually, and all interest and principal payable at Arcadia, DeSoto County, Florida.

The said Board of County Commissioners reserves the right to sell the whole or any part of the said bond issue and also to reject any and all bids.

Each bidder is required to furnish certified check for 2 per cent. of his bid as evidence of good faith. The said checks of unsuccessful bidders will be returned and the checks of the successful bidder will be forfeited in case he fails to comply with his bid. Each bidder will state the time when he will comply with his bid by paying money or other evidences thereof.

(Seal.) A. L. DURRANCE,
Clerk of Circuit Court.

Notice to Contractors and Bond Buyers

Greenville, Tex.

The Board of Permanent Road Commissioners of Road District No. One, Hunt County, Texas, will on January 27, 1915, in the City of Greenville, Texas, consider proposals for the construction of a system of improved highways in said District. Plans, specifications and other information will be on file after January 11, 1915, in the office of Julian C. Field, Consulting Engineer, Denison and Greenville, Texas, and with W. M. Henly, Secretary of the Board, Greenville, Texas. Funds available approximately \$400,000. Bidding check required, five per cent. (5%) of bid.

At the same time and at the same place the Commissioners' Court of Hunt County, Texas, will receive proposals for the sale of \$400,000 in five per cent. (5%) semi-annual Road District No. 1, Hunt County, Texas, road bonds.

The right to accept or reject any or all proposals is reserved.

W. M. HENLY,
Sec'y Board of Permanent Road Commissioners, Road Dist. No. 1, Hunt County, Texas, and Auditor for Hunt County, Texas.

Montgomery County, Va. Bond Issue

Christiansburg, Va.

Bids will be received until noon February 23, 1915, for \$35,000 worth of Montgomery County Bonds for the improvement of roads in Blacksburg District. Bonds will be in denomination of \$500 each, bearing 4 per cent. interest, payable semi-annually, and to mature 30 years after date, with option to redeem after 20 years, and will be exempt from taxation by any County District or Municipality in Virginia.

The Board of Supervisors reserve the right to reject any or all bids. For further information apply to the undersigned or R. I. Roop, Commonwealth's Attorney.

GEO. W. WILSON, Clerk,
Board of Supervisors,
Montgomery County, Va.

\$94,000 City of Magnolia Park, Texas

NOTICE OF SALE OF WATER-WORKS BONDS.

The City of Magnolia Park, Texas, will sell \$94,000 in bonds of said city on the 5th day of February, 1915.

Bids must be in by eleven o'clock A. M. of said day. Bonds in denominations of \$500. Payable in 40 years, optional after 10 years; interest five per cent., payable annually.

Bids must be accompanied by a certified check for \$1880. Bids addressed to John B. York, City Attorney, City of Magnolia Park, Texas, marked "Sealed bids."

The city reserves the right to reject any and all bids.

Dated City of Magnolia Park, Texas, January 8, 1915.

JOHN B. YORK,
City Attorney,
City of Magnolia Park, Texas.

\$40,000 City of Magnolia Park, Texas

NOTICE OF SALE OF STREET-IMPROVEMENT BONDS.

The City of Magnolia Park, Texas, will sell \$40,000 in bonds of said city on the 5th day of February, 1915.

Bids must be in by eleven o'clock A. M. of said day. Bonds in denominations of \$500. Payable in 40 years, optional after 10 years; interest 5 per cent., payable annually.

Bids must be accompanied by a certified check for \$800. Bids addressed to John B. York, City Attorney, City of Magnolia Park, Texas, marked "sealed bids."

The City reserves the right to reject any and all bids.

Dated City of Magnolia Park, Texas, January 8, 1915.

JOHN B. YORK,
City Attorney,
City of Magnolia Park, Texas.

Notice of Bond Sale

Sealed bids will be received by the Board of Supervisors of Pinellas Park Drainage District, at the offices of the Board, in Pinellas Park, Florida, until noon of Thursday, the 4th day of February, A. D. 1915, for the purchase of the bonds of said Drainage District, aggregating \$108,000, running from ten to thirty years, according to the different series.

Fuller particulars given on inquiry. Address all inquiries, bids, etc., to P. J. McDevitt, Secretary, Pinellas Park, Florida.

\$10,000 School Bonds

The Mayor and Board of Aldermen will receive sealed bids to noon on the first Tuesday in February, 1915, for the \$10,000 schoolhouse bonds for the separate district of the town of Hickory, Hickory, Mississippi.

WATERWORKS AND SEWERS

Cast Iron Water Pipe, Etc.

Office of the Mayor,
Asheville, N. C., January 6, 1915.

Bids will be received at the office of the City Clerk until February 12, 1915, for furnishing and laying about 5850 feet of 10" cast-iron water pipe (Class B), with the necessary specials, gates and hydrants.

Specifications of the work can be obtained at the office of the City Engineer.

Bids are also asked for furnishing f. o. b. cast-iron water pipe (Class B), about 186.5 tons.

The city reserves the right to reject any and all bids.

F. L. CONDER,
City Clerk.

Water and Sewerage Extensions

COLUMBIA, S. C.

Sealed proposals will be received by the Commissioners of the City of Columbia, S. C., until 10 A. M. January 29, 1915, for extensions to the water and sewerage systems.

The work will consist of approximately ten miles of water mains, ranging in size from 6" to 12", and ten miles of sewer mains from 8" to 15".

Specifications, form of proposal and contract and plans may be seen at the office of the Engineer-Superintendent after January 9, or will be mailed upon application to the Engineer, accompanied by the payment of five dollars for the specifications and form of proposal and contract, and five dollars for the plans, which payments will be refunded upon the return of the same in good condition within ten days after the letting.

The right is reserved to reject any or all bids.

F. C. WYSE,
Engineer-Superintendent.

E. M. DuPRE,
Council Superintendent.

MISCELLANEOUS

Clothing, Shoes, Cots, Etc.

Sealed bids will be received and opened by Board of County Commissioners of St. Lucie County, Fla., at 2 P. M. February 2, 1915, for furnishing clothing, shoes, cots, etc., for county convicts.

J. E. FULTZ,
County Clerk,
Fort Pierce, Fla.

Fire Apparatus

New Bern, N. C., Jan. 14, 1915.

Sealed bids will be received by City of New Bern up to eight o'clock P. M. Monday, February 1, 1915, for furnishing one triple combination motor car for Fire Department. Capacity not less than eight hundred gallons per minute. Right reserved to reject any or all bids.

F. T. PATTERSON,
City Clerk.

Hospital Building

NOTICE TO CONTRACTORS.

Notice is hereby given that the Board of Directors of the Emergency Hospital will, until noon on the 20th day of February, 1915, receive at their office in Easton, Maryland, sealed bids for the furnishing of all materials and labor necessary to erect and complete a three-story brick Hospital about 100 feet long and 40 feet wide.

Plans and specifications can be seen at the present Hospital in Easton, or can be obtained of the Architects, Guy King & Co., 1513 Walnut St., Philadelphia, Pa., for the usual fee.

All bids must be accompanied by a certified check for five per centum of the contract price, which checks will be returned to the unsuccessful bidders.

The successful bidder will be required to furnish a bond to cover the amount of the contract.

The Board of Directors reserve the right to reject any and all bids or to accept any bid irrespective of price which seems to them most advantageous.

Address
HAMPTON HOWELL, Secretary,
Easton, Talbot County,
Maryland.

Paving Bids Wanted

Marshall, Texas.

Sealed bids will be received by the City Secretary of the City of Marshall, Texas, until 2 P. M. Tuesday, January 26, 1915, for approximately 9000 sq. yds. of Asphalt Macadam pavement or Asphaltic Concrete pavement, together with concrete curbs, gutters, inlets, drainage, etc.

Each bidder is required to deposit with his bid a certified check in the sum of one thousand (\$1000) dollars, payable to H. S. Rice, City Secretary, as a guarantee that the successful bidder enter into contract within a reasonable time, and the successful bidder's check shall become the property of the city in the event of failure or refusal to enter into contract after the award has been made to him. Plans and specifications for the work are on file in the office of the City Engineer, where they may be seen by prospective bidders.

The city reserves the right to reject any and all bids.

H. S. RICE,
City Secretary.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

The Newport Culvert Co., Inc.

On January 1, 1915, the Newport Culvert Co., Inc., of Newport, Ky., took over the Newport business of the Harry Bros. Co., Inc. The Newport Culvert Co. will continue as the maker of "Genuine Open Hearth Iron" culverts.

Irrigation Plant Completed.

Completion of a Layne Irrigation plant near Mowata, La., for Fred Loewer is reported by the Layne & Bowler Co. of Houston, Tex. The plant is equipped with a Layne patent 13-inch shutter screen, a 70-foot steel pit and a Layne patent two-stage No. 8 pump. Although the water stands 35 feet below the surface, it is said the plant produced on test 3420 gallons per minute.

Maynard-Carter-Simmons in Atlanta

Announcement is made that Dr. T. Poole Maynard, consulting geologist, of the association of Maynard-Carter-Simmons, geological, mining and civil engineers, 321 James Bldg., Chattanooga, Tenn., has moved to Atlanta, and will have charge of the offices of the company in that city, which are located in the Hurt Bldg. An office is also maintained in Columbus, Ga.

Asbestos Protected Metal Co. Moves General Offices to Pittsburgh.

On February 1, 1915, the general offices of the Asbestos Protected Metal Co., including the executive, accounting, sales and engineering staffs, will be moved from the Beaver Falls plant to the First National Bank Bldg., Pittsburgh, Pa. The manufacturing operations of the company will continue as heretofore at Beaver Falls, Pa., and at Waltham, Mass.

Steel Piling Contract Awarded.

Contract has been awarded to the Underpinning & Foundation Co., engineer and contractor, 290 Broadway, New York, for the Hercules steel piles specified on the revised plans for the foundations of the McKinley School, Eighth Ave. and Factory St., Newark, N. J. E. M. Waldron & Co., Newark, N. J., has the general contract, and the work is being done under the supervision of E. F. Guilbert, architect for the Board of Education of Newark.

Douglas Mackintosh, Architect.

Douglas Mackintosh, for many years with F. M. Andrews & Co. of New York, and more recently with Janssen & Abbott of Pittsburgh, has opened an office for the practice of architecture at the Keystone Bldg., Pittsburgh, Pa. Harry M. Prince, who has closed his offices in the Mutual Life Bldg., Jacksonville, Fla., will be associated with Mr. Mackintosh at the Pittsburgh address. They wish to receive samples and catalogues for the office files.

Installing Fuel Gas-Producing Apparatus.

At the "Southland" Seminary, under construction on the west coast near St. Petersburg, Fla., a twentieth century gas-producing apparatus, with a modern gas-fired hot water range, broiler, automatic steam generator and gas heaters for the entire institution, is being furnished and installed by the C. M. Kemp Manufacturing Co., 405-415 E. Oliver St., Baltimore. The Kemp company manufactures "Climax" gas machines for cooking and illuminating isolated homes, automatic gas systems, plumbing specialties, etc.

Southern Clay Products Sold in the North.

During a recent trip North B. Mifflin Hood, president of the B. Mifflin Hood Brick Co., manufacturer of brick and clay products, 1014-34 Candler Bldg., Atlanta, Ga., reports that out of seven mantel and tile dealers visited in one city, seven purchased his clay products, and five out of six mantel and tile dealers called on in another city gave orders. Referring to the prosperity in the Northwest and to the reasons for this, Mr. Hood writes: "As soon as the farmers and the manufacturers of the South intensify

and diversify their products, then, and not until then, will unprecedented prosperity sweep over our section."

Seeking Southern Business.

D. F. Hull's Sons, founders and machinists, Hagerstown, Md., who have conducted a local business for a number of years, announce that with the completion of their new plant, which is said to be a model of its kind, an active campaign for foundry and machine work in the South has been started. Finding their former foundry was inadequate for the amount of work in hand, the new plant, which has a daily capacity of one ton of gray iron castings, was constructed. Excellent shipping facilities are provided, as the plant is located immediately on the railroad and connected with a switch. Large and small size castings for the Western Maryland Railroad have been among some of the work the company has recently turned out.

Poster and Advertising Frame.

The Newman Manufacturing Co. of Cincinnati, O., with branch factories at 108 W. Lake St., Chicago, and 101 Fourth Ave., New York, manufacturer of brass poster frames, easels, railings, ticket choppers and theater fixtures of every description, has recently developed an attractive brass poster frame for displaying a one-sheet poster in the center, and surrounding this are various compartments in which eight advertising cards can be inserted. These advertising cards are intended to bring revenue from the advertisement of stores in the vicinity or from national advertisers. A complete catalogue pertaining to poster frames and theater fixtures in general will be sent to interested persons upon request to the company.

Electrical Supplies in South Georgia.

To increase its facilities for handling electrical contract work in Georgia, Florida and Alabama, the Levy-Morton Company, 1223 Broad St., Columbus, Ga., has opened a branch at Americus, Ga., in charge of John M. Flournoy, formerly with the Pensacola (Fla.) Electric Co. A full stock of electrical contractors' supplies will be carried in stock and the necessary force of workmen will be kept at the Americus branch at all times. Owing to its accessibility to Columbus, the company will be able to give this business a good part of its personal attention, and also quickly draw on the larger stock of electric fixtures, mantels, tiles, fireplaces, etc., for anything not carried at the branch.

Vilter Refrigeration Machinery Sales

Among recent refrigerating and ice-making machinery installations by the Vilter Manufacturing Co. of Milwaukee, Wis., the following have been made in the North and West: A 10-ton refrigerating plant for W. J. Miller, Bridgeton, N. J.; a 150-ton refrigerating plant for the Port of Seattle, Seattle, Wash.; a 12½-ton refrigerating plant at Hancock, Mich.; and a 12-ton refrigerating plant at Crookston, Minn., for the Bridgman-Russell Company of Duluth, Minn.; a 100-ton refrigerating machine for the Albert Lea (Minn.) Packing Co.; a 10-ton refrigerating plant for the Carleton Realty Co.'s Bellefield Apartments, Pittsburgh, Pa.; a 10-ton refrigerating plant has been installed at the Elliot Brant Rancho, Owensmouth, Cal.; the American Camphor Corporation, Philadelphia, has installed an 8-ton refrigerating plant, and at Readburg, Pa., a 10-ton refrigerating plant was installed for E. R. Meinig.

H. B. McMaster Goes With Berger Manufacturing Co.

H. B. McMaster, commissioner for the Associated Metal Lath Manufacturers, who has been directing the co-operative work of the metal lath industry since 1910, has resigned to become manager of branches for the Berger Manufacturing Co. of Canton, O. His connection with the Canton concern will begin February 1, 1915, and his successor will not be chosen until the next meeting of the Metal Lath Association. Mr. McMaster went to Youngstown, O., at the

time of the organization of the General Fireproofing Co., of which company he was secretary. He resigned in 1906 to become manager of sales for the rod and wire department of the Youngstown Sheet & Tube Co. In 1910 he resigned that position, and aside from his work with the Metal Lath Association was manager of the Ward Nail Co., in the reorganization of which he took part, and during the year 1914 had charge of a bureau of development organized by the Association of Sheet and Tinplate Manufacturers, primarily for the purpose of launching a national campaign of concerted promotion in the interest of the sheet metal industry.

Roofing and Pipe Covering Contracts

One of Baltimore's new corporations, the Chesapeake Roofing & Pipe Covering Co., 30 Light St., reports very satisfactory results of its first six months' operations, notwithstanding the unusual conditions which have prevailed. The Chesapeake Roofing & Pipe Covering Co. distributes asbestos ready roofing and "Century" asbestos shingles manufactured by the Keesbey & Mattison Company, Ambler, Pa., and "Genasco" ready roofing and waterproofing materials of the Barber Asphalt Paving Co. of Philadelphia, Pa. Roofing, waterproofing, mastic and cork tile flooring, and all classes of pipe and boiler covering contracts are executed by the company. Among the more important contracts secured, some of which have been completed and others carried over into the new year, are the following: Consolidated Gas, Electric Light & Power Co., Baltimore, approximately 6000 lineal feet of 85 per cent. magnesia pipe covering applied at the new Westport power plant; Coca-Cola Company, Leonard Tufts, contractor, 10,000 square feet of 7-ply underground waterproofing under foundations of the new Coca-Cola Bldg., Baltimore; Kann's Department Store, Washington, Richard Morton, Baltimore, contractor, 1753 feet of three-inch 85 per cent. magnesia pipe covering; Southern Aluminum Co., Whitney, N. C., 340,000 square feet of Keesbey & Mattison Co.'s corrugated asbestos roofing on aluminum furnace buildings; R. J. Reynolds Tobacco Co., Winston-Salem, N. C., 26,000 square feet of asphalt mastic floors in tobacco factories; Melville & Gambrill Mills Co., Havre de Grace, Md., 48,500 square feet of asbestos built-up roofing on cotton mills at Bessemer City, N. C.; Martinsville (Va.) municipal building, 5000 square feet of "Century" asbestos shingles, and many other pipe and boiler covering contracts in the city of Baltimore.

TRADE LITERATURE

"Nocare" Electrical Steam Radiator.

For keeping warm houses, rooms or offices at times of sudden changes of the outside temperature, the "Nocare" electrical steam radiator has been designed and developed by the Electrical Steam Radiator Co., 644 Congress St., Portland, Maine. It is said to be an efficient auxiliary heater and is especially adapted for use in bathroom or sickroom. In describing this new invention, the company states it is portable, noiseless, dustless and odorless, and can be used wherever electric current is available.

Sangamo Electric Meters.

Alternating current Watthour meters, single-phase and polyphase, and current and potential transformers, are illustrated and described in Bulletin No. 40, issued by the Sangamo Electric Co. of Springfield, Ill. Detailed construction and superior features of the type "H" Watthour meter and the type "H" polyphase Watthour meter are given in the bulletin, together with information and diagrams showing proper method of installing and connecting Watthour meters.

Portable Electric Tools.

"Ideal" portable electrically-driven tools, manufactured by the Neil & Smith Electric Tool Co. of Cincinnati, O., are illustrated and described in catalogue No. 4, issued by the company. Variable and constant speed grinders of all kinds, aerial extension and bench buffers, reamers, augers and drills, electrically-driven screw-drivers and direct-connected portable circular saws are among "Ideal Tools" listed in the catalogue, which will be sent to interested persons upon request to the company.

Clark Meter Testers.

In the circular describing and illustrating the increased line of Clark water meter testers, which is issued by the H. W. Clark Co., manufacturer of the Clark meter-box and water-works appliances, Mattoon, Ill., six complete combinations are given. The machines are furnished complete, including

Fairbanks standard scale, a special water meter tester beam and percentage bar, 100-gallon galvanized iron tank and tester table, and are manufactured to meet every requirement of the water-works manager.

Turbine and Volute Pumping Machinery.

A folder has been issued by the Lea-Courtenay Co., 90 West St., New York, illustrating and describing its double and single suction multi-stage turbine pumps, double suction volute pumps, both steam turbine and motor driven; vertical single suction turbine pumps, standard fire pumps and portable sinking pumps. The company reports the development of its line of pumps is the result of wide experience, embracing designing, building and installing, and that its engineering department is in a position to recommend the most economic pumping unit suited to any specific class of service.

Steam Boilers and Boiler Feed Water

A carefully prepared booklet on the scientific treatment of steam boilers and boiler feed water, which is published by the American Boiler Life Co., 19 N. Market St., Boston, Mass., is being distributed by the American Steel Gauge & Valve Manufacturing Co. of Boston. In the discussion emphasis is laid on the fact that although feed water may be of the purest natural water, it may contain ingredients that will ruin a boiler by depositing "scale," which thus prevents heat radiation. The manner in which this scale may be kept from the inside of boilers is described in detail in the booklet.

Road Building and Earth-Handling Machinery.

Russell elevating grader and wagon loader, dump wagons, both horse-drawn and power-driven road machinery, wheeled and drag scrapers, scarifiers, etc., are illustrated in colors and described in detail in a catalogue issued by the Russell Grader Manufacturing Co., 2307-2229 University Ave. S. E., Minneapolis, Minn. Illustrations and description of Russell's steel beam bridges using concrete or wooden flooring, steel piling or legs for bridges, and "knocked-down" and built-up riveted types of corrugated metal culverts manufactured by the Russell company, are given in the catalogue, together with information on road building, ditch construction and bridge specification tables, and tables of gauges, weights and capacities of Russell culverts.

Savannah Engineering & Construction Co.

To illustrate its ability and experience in properly handling the engineering and construction problems along many different lines, a catalogue containing views of construction operations in different parts of the country, carried on by the Savannah Engineering & Construction Co. of Savannah, Ga., has been issued. In the catalogue are shown illustrations of phosphate drying and storage plants erected for the Phosphate Mining Co. at Nichols, Fla.; for the Export Phosphate Co. at Ridgewood, Fla.; and for the Amalgamated Phosphate Co. at Brewster, Fla., and views showing extension to the fertilizer plant of the Southern Fertilizer & Chemical Co. at Savannah, which was designed and constructed by the company. Many other contracts executed by the company include machine-shop buildings, transformer-houses, power-houses, office buildings, "Torrance" bulkhead wharf for the Standard Fuel Supply Co. at Savannah, factories, etc.

Continental Insulation Products.

Some of the striking peculiarities of "Vulcanized Fiber," "Bakelite-Dilecto" and "Continental Bakelite" insulating materials, which are the principal products manufactured by the Continental Fiber Co. of Newark, Del., are given in a new descriptive catalogue issued by the company. Although manufactured primarily as insulating materials, the company claims their exceptional physical qualities render them adaptable to a wide range of mechanical applications, viz., rollers, journals, gears, wheels, brake shoes, bushings, press plates, advertising novelties, etc. "Vulcanized Fiber" is manufactured from pure cotton by a chemical process which changes the nature of the raw material entirely; "Bakelite-Dilecto" is manufactured under the Bakelite patents and combines the high dielectric, heat resisting and other properties of insulating material with unusual toughness and mechanical strength, and "Continental Bakelite" is similar to "Bakelite-Dilecto," but in addition has much greater strength. It is manufactured for the sole purpose of track insulation in connection with electric track circuit signals.

Special Advertisements of General Interest.

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OF THE

Blytheville Water Co., Blytheville, Ark.

The entire water-works, plant and system of the Blytheville Water Company at Blytheville, Arkansas, and all its properties and franchises, will be sold February 5, 1915, under decree of foreclosure. The town of Blytheville has a population of about six thousand, and is one of the growing towns of the State. The plant is now in successful and paying operation. The sale will be made at Blytheville on a credit of three months, the purchaser to give bond with approved security, bearing interest at 6 per cent. from date of sale, and a lien retained on the properties for the payment of the purchase price.

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Has the most complete natural-gas system in the entire Southwest. Splendid water system. Glass sand assaying 99.53% silica. The best limestone in the State. Fire and brick shales. Large and splendid agricultural trade territory. Oil and gas field developing. Large distributing territory. We invite capital to fully investigate our opportunities.

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Complete outfit for laying water pipe up to 12-inch. Write

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Steam and Electric Machinery CORLISS ENGINES

Compound: 32 & 62x60 Allis H. C. C.—26 & 54x60 Allis H. T. C.—22 & 44x48 Monarch.—18 & 32x42 Allis.—14 & 28x36 L. & B. H. C. C. Simplex. 36x72 Prov.—28x48 Allis.—Vilter.—24x48 Ham. & Allis.—22x42 Hamilton.—18x36 Nagle.—16x42 St. Louis.—16x32 F. & S.—3-14x36 St. Louis, Murray, R. & F.—13x36 Quincy.—12x30 St. Louis.—10x30 St. Louis.

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2 180 H. P. Heine, 125 lbs. pressure.
2 250 H. P. Heine, 150 lbs. pressure.
2 300 H. P. B. & W., 100 lbs. stokers.
2 300 H. P. Heine, 150 lbs. pressure.
2 300 H. P. Sterling, 150 lbs. pressure.
2 300 H. P. Edgenoor, 175 lbs. pressure.
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K.W. Make. Volts. Rev. Engine.
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750 G. E. 2300 K. & K. Comp. Cor.
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Want to exchange 10 and 15 H. P. Westinghouse Motors, practically new, and one Boushner Corn and Cob Crusher No. 8 for 30 H. P. Oil Engine of standard make, either second-hand or new. Nothing wanted but the very best.

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One 72" x 18' return tubular boiler. Must have boiler insurance certificate for 125 lbs.

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You Can Save 50%

IN THE PURCHASE OF AN APPARATUS

SPECIALS

400 K. W. Westinghouse-Parsons 60-cycle, 2 or 3-phase, 440-volt, with condenser.
200 H. P. Smith, type E, Gas Producer Plant, complete.

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Write for Free Complete List No. XB-213.

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1 No. 3 Wickes Sash Gang.....\$1250.00
1 18"x12" S. A. Woods 6-Roll Timber Sizer..... 500.00
1 24"x30" Filler & Stowell Engine..... 1250.00
1 100 H. P. 100-lb. H. A. Boiler, complete..... 400.00
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1 10" dia. Mine Ventilating Fan, with engine.
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The above must be sold without reference to cost. Write us.
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3 Lidgerwood Hoisting Engines, cylinders 8½x10, D. D., D. C., first-class condition.

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3 4 H. P. Interpole, 500 V., 1500 R. P. M., 60.00
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All machines are complete and fully guaranteed. Write for our monthly Bargain Sheet.

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Steam Heating Outfit FOR SALE

Complete Steam Heating Outfit, used three months, suitable for small hotel. Write to

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For Sale—Two Single-phase G. E. Generators, 120 K. V. A., 2200 volts, belted to two Harrisburg 4-valve engines; also, switchboard, steam piping and accessories, and three 150 H. P. return tubular boilers. This equipment can be seen in operation at the Washington, N. C., Electric-Light Plant, and additional information with prices obtained from

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At a Saving of 40% Over Usual Prices

We have a special lot of new double leather belt of some of the best makes, including Fayerweather & Ladew, which, owing to its being stock worn, and in some instances remnants from manufacturers' sales, can be offered at the low prices enumerated below. This, in view of the sharp rise in belting prices, should interest every belting buyer. In case we do not have the width you desire, but have something that can be cut down, this will be done free of charge, as will joining to make a continuous length.

45" ¾"	.....	\$.09 per foot
230" 1"	.....	.12 per foot
63" 1½"	.....	.18 per foot
50" 2"	.....	.24 per foot
35" 2½"	.....	.30 per foot
25" 3"	.....	.33 per foot
25" 3½"	.....	.36 per foot
1500" 3½"	.....	.42 per foot
65" 3½"45 per foot
400" 4"48 per foot
625" 4½"54 per foot
850" 5"60 per foot
230" 5½"62 per foot
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45" 14"	1.63 per foot

We also have in stock a considerable quantity of new and second-hand single and double leather belting at special prices. If you need belting, do not fail to send us a list of your requirements. We will send you samples and quotations.

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Revolving Stone Screen

At Less Than Cost

42"x15", heavy trunnion type. Perforations as follows:
4" 6"-¾" holes, 4" 6"-1½" holes.
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With dust jacket, outside tie bars of iron pipe, steel trunnion rings, complete, with 45" drive pulley. Weight about 5000 pounds. For \$480, f. o. b. Wheeling.
Better wire for immediate shipment.
A full line of portable and stationary stone crushers, elevators, trucks, engines, pulverizers, for every rock-crushing purpose.

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1 72" Plate Mill with Straightening Rolls and Table.

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1 Blooming Mill with Tables and Billet Shear. This material is from the dismantling of the Tidewater Steel Plant at Chester, Pa. Apply to

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In replacing our manufacturing equipment we find the following first-class

Used Machine Tools

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16"x 6' Beed.
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20"x 8' Lodge & Shipley, Q. C. G.
20"x 10' Lodge & Shipley, Q. C. G.
20"x 12' Lodge & Shipley, Q. C. G.
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No. 3 Lodge & Shipley Rapid Reduction Lathe.
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Globe Power Hack Saw, 8" capacity.

MISCELLANEOUS MACHINES

One Marion Double Grinder.
One Marion Double Grinder on stand.
One Diamond Combination Grinding and Polishing Stand on column.
One Sturtevant Blower, diameter of outlet 24".
One "Ohio Planer," 24"x24"x12", with two heads on cross rail.
Universal Swivel Table for Radial Drill.
Brown & Sharp Grindstone Frame for 5"x 36" stone.
One Mueller Grindstone Frame for 4"x27" stone.
One 12"x10" Mumford Molding Machine.
Write for complete description with prices of machines in which you are interested.

The Lodge & Shipley Machine Tool Co.

CINCINNATI, OHIO

FOR SALE

Alternating Current Generators

DIRECT CONNECTED TO GAS ENGINES

1 80 K. W. each 3-phase 60-cycle 220-volt Alternators, direct connected to Westinghouse Vertical 3-cylinder Gas Engines.

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These outfits are in first-class operating condition and will be sold very cheap to quick buyers before we remove them to our warehouse in Chicago.

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Woodworking machinery of all kinds.
Write, stating your requirements.

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Second-Hand

Machine Tools

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Boilers, Stationary Engines, Hoisting Engines, Pumps, new and second-hand, every size and for every duty.

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Heavy, well-made iron-bound casks, 42" diameter middle, 36" diameter ends, 42" high, 1 1/4" thick, in sound condition, with both heads in. Sold singly or in car lots.

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BOILERS, STATIONARY: HIGH PRESSURE: 1 200 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 2 80 H. P. for 125 lbs. Standard from 150 H. P. to 20 H. P. for 100 lbs.

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GENERATORS AND MOTORS: All sizes and kinds, belted and direct connected.

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400 H. P. G. E. Induction Motor, 720 R. P. M., 2200 volts, complete.....\$3000.00
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75 H. P. G. E., slip ring, new, 850 R. P. M., complete.....\$500.00
50 H. P. Allis-Chalmers, 3-phase, new, 850 R. P. M., complete.....\$300.00
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35 H. P. Westinghouse, 2-phase, 1140 R. P. M., complete.....\$200.00
25 K. W. C. & C. to Watertown engine, 115 volts.....\$400.00
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Large stock of smaller motors and dynamos, both A. C. and D. C. Let us have your requirements.

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Industrial Power Plant Equipment

Electric Generating Units, large stock of all kinds, including Motors, Heaters, Boilers, etc.

Send us your specifications.

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Geared head 20"x10", 18"x10", 15"x8", 16"x 8", 16"x6". Cone head 20"x18", 15"x8", 15"x6". All the above with semi-quick-change gears. Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x6". Second-hand lathes, cone head, plain gears, 20"x18", 21"x6", 20"x10", 18"x8", 13"x8", 13"x5".

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DIRECT CURRENT 125 VOLTS

Direct Connected Units.
K.W. Generator. Engine. Price.
9 Cr.-Wheeler. Beeves.....\$250
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35 DeLaval Turbine.....450
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50 Wghse. Wghse. Gas.....1200

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STEAM ENGINE AND MOTOR DRIVEN PUMP

25 H. P. 9x12 Nagle Center-Crank Plain Slide-Valve Engine in excellent condition at low price.
Motor-Driven Centrifugal Pump, 250 gals. per min. against a 225-ft. head, practically new, at half price. Will equip with any style motor desired.

Electrical apparatus of all kinds at lowest prices.

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300 K. W. Crocker-Wheeler, Wetherill engine.....\$8000.00
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Send for catalog.

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1 25 H. P. Triumph, 110-125-volt, compound wound, D. C. Motor or Generator.
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1 each 2, 5 and 10 H. P. General Electric 3-phase Motors, 1200 R. P. M.
1 8"x8" Ingersoll Belt-driven Air Compressor.
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Refrigerating Machines, 2 to 100 tons.
Gas Engines, 2 to 500 H. P.
Motors, all sizes, A. C. and D. C.

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PUMPS Blowers and Filter Tanks

One Deane Steam Pump, No. 16166, horizontal duplex double-acting compound non-condenser plunger and ring pattern, 14-20-12-18.

One Worthington Steam Pump, No. 100,182, size 7 1/2x14x10.

Filtration Plant, manufactured and installed by New York Continental Jewell Filtration Co., original cost \$8500, consisting of 4 filter tanks 16 ft. in diameter by 8 ft. high, with 2 ft. of sand in each; worth \$1000. Also, F. M. Roots Co. 4-in. Centrifugal Blower, size 2, No. 27271, with upright engine, No. 5148, made by N. Y. Steam Power Co., for operating same.

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We are always in the market to buy

Scrap Iron and Steel OF EVERY KIND

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GENERAL ELECTRIC MOTORS

230 volts, like new, about 2 years old.
2 50 H. P., 650 shunt wound D. L. C., \$375.00
1 50 H. P., 650 compd. wound D. L. C., 400.00
1 25 H. P., 650 shunt wound D. L. C., 250.00
1 25 H. P., 650 compd. wound D. L. C., 265.00
2 15 H. P., 825 compd. wound C. V. C., 170.00
1 15 H. P., 625 compd. wound D. L. C., 200.00

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New and Used.

Send Us Your Requirements.

POWER EQUIPMENT COMPANY

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Direct Current Generating Sets, Boilers, Feed Water Heaters Horizontal and Vertical Steam Engines

Air Compressors Steam Pumps and Mine Equipment

All in Excellent Condition.

The above equipment displaced from 19 coal mines by the introduction of Central Station Power.

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1876

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Naturally prices will advance with the increased demand. Why not take advantage of the prices we are now quoting.

We have a large stock of Direct and Alternating Current Motors, Direct Connected and Belted Generators, Boilers, Engines, Pumps, Machine Tools and Woodworking Machinery.

We must move quickly some of our largest rebuilt second-hand outfits, among which are large Planers, Lathes, Boring Mills, Punch Presses, Direct Connected Generators and Boilers. This is to get floor space for some large purchases of smaller tools. Attractive prices will be quoted.

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Machine Tools

60"x60"x14" Sellers Planer, 4 heads.
60"x60"x14" Pond Planer, 3 heads.
48"x48"x15" Sellers Planer, 2 heads.
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48" Sellers Vertical Boring Mill, 2 heads.
Niles Vertical Boring Mill, 2 heads.
3500 lbs. Bement-Miles Double Frame Steam Hammer.
250 lbs. Bement-Miles Single Frame Steam Hammer.
200 lbs. Bradley Helve Hammer.
No. 3 Kempnuth Plain Milling Machine with universal dividing heads.
30"x12" Hess Heavy Duty Slab Milling Machine.
12" Niles Slotter.
38"x20" Fildel Lathe, triple geared.
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18"x14" Schumacher & Boye Lathe.
16"x 6" Hendey Lathe, taper attachment.
14"x 8" Hendey Lathe.

Power Equipment

WATER TUBE BOILERS
Two 350 H. P. Sterling Water Tube, 150 lbs. steam working pressure.
Three 250 H. P. Franklin Water Tube, 150 lbs. steam working pressure.
RETURN TUBULAR BOILERS
Six 200 H. P. 78"x20" Horizontal, 125 lbs. steam working pressure.
Eight 150 H. P. 72"x18" Horizontal, 125 lbs. steam working pressure.

CORLISS ENGINES

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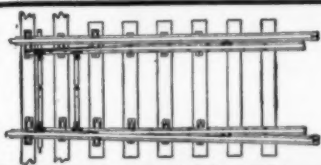
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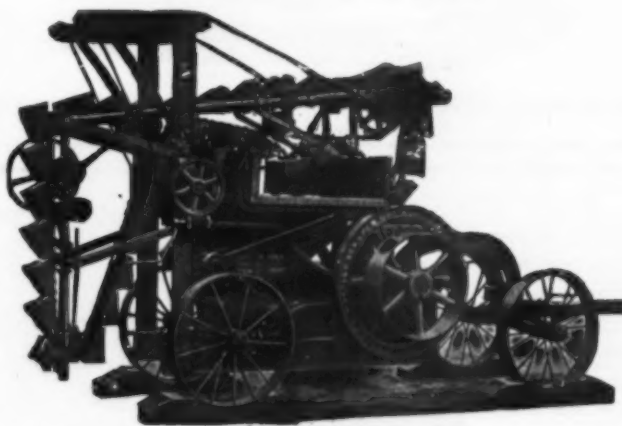
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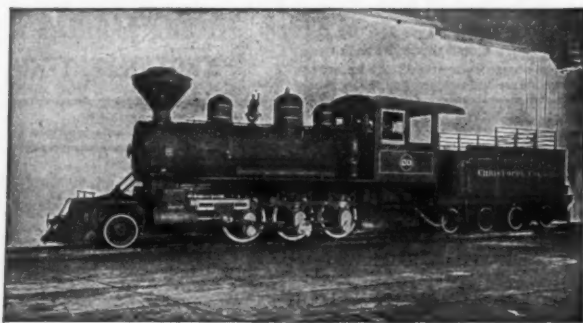
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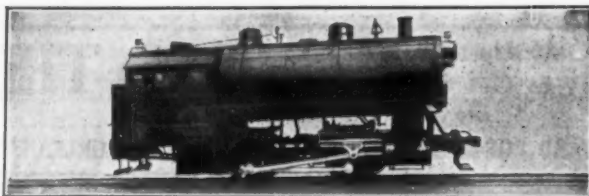
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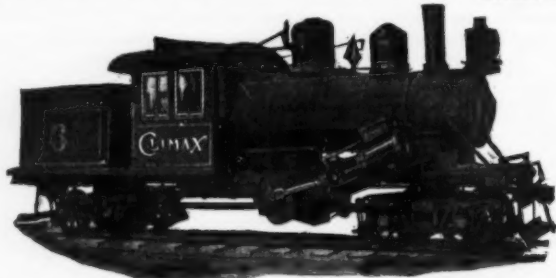
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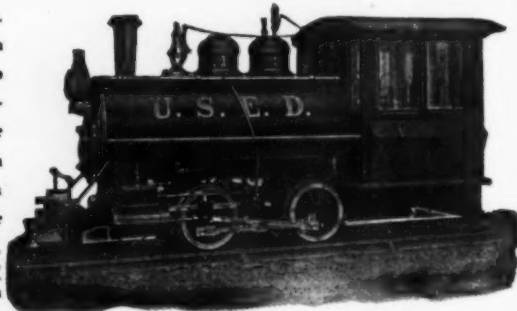
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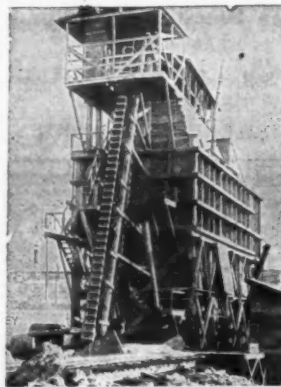
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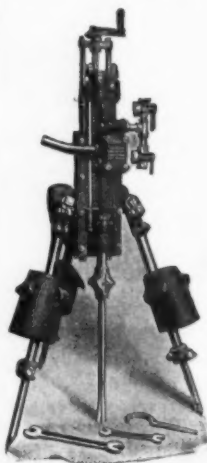
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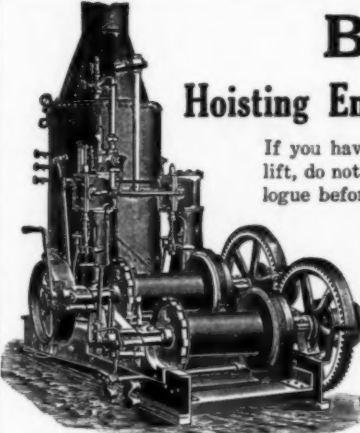
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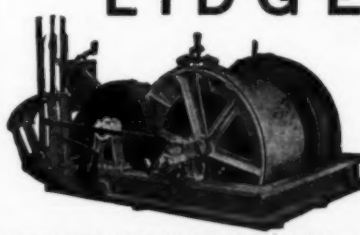


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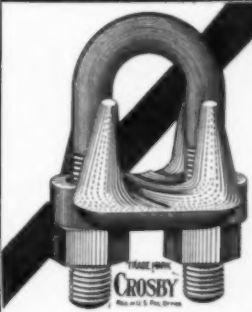
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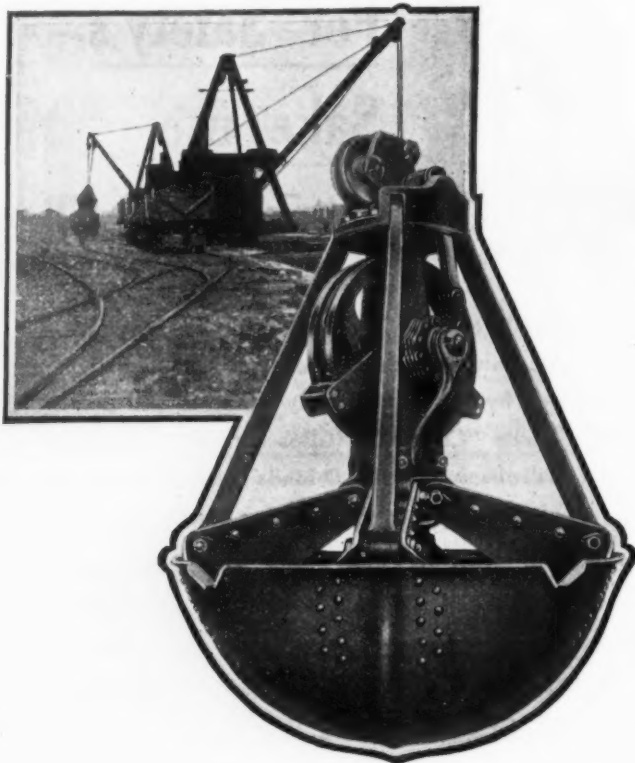
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Avoid acci-
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DEPENDABLE CHAIN

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Pittsburgh

MARION Revolving Steam Shovels

For Better Road Work



Can be operated by one man. Swings in a complete circle. Invaluable for road and street grading and all classes of excavating. Built strong and for continuous work. Used and endorsed by contractors the world over.

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NEW YORK, 50 Church St.

ATLANTA, 1411 Candler Bldg.



THE CHATTANOOGA RY. & LIGHT COMPANY'S TYPE "O" THEW SHOVEL

The Thew Shovel Is Standard

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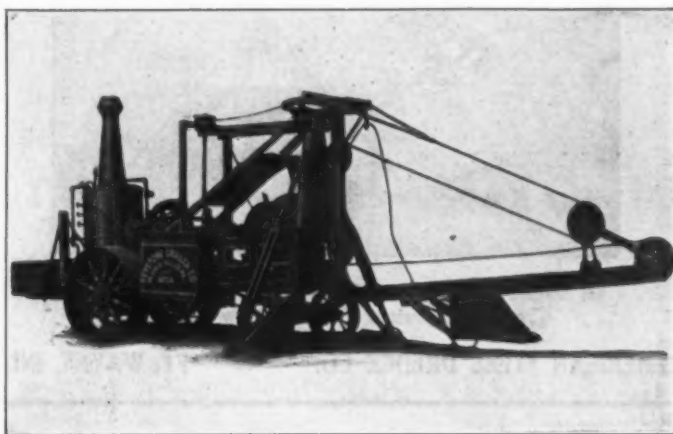
Brick Yards, Road Building, Street Grading, Cellar and Sewer Digging, Electric Railway Construction and All Excavations involving daily outputs of 1000 cubic yards or under.

1200 Thew Shovels are now in operation. Some of them are near you.

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THE THEW AUTOMATIC SHOVEL CO.
LORAIN, OHIO

A Light, General Utility Steam Shovel for Contractors' Use



The cut shows machine with Skimmer Scoop for street grading and road work. It will dig a crust that would otherwise have to be broken by a rooter. Leaves a flat, finished surface for paving. Operated by two men. Capacity 150 to 300 wagon-loads in ten hours.

KEYSTONE Traction Excavator

This portable machine can be used with three kinds of scoops—adapting it to practically every grading and excavating job in the contracting field; the Skimmer Scoop for street grading; the Dipper Scoop for side hill embankments; the Ditcher Scoop for trenches, irrigation ditches, etc.

It is light—only 8 tons; portable—moving on its own power anywhere a dump wagon can go, and it is readily loaded on a freight car for shipment.

It saves both in first cost and operation over the heavier types of steam shovels. The price is surprisingly low.

We have photos of the Keystone on jobs similar to yours. Write for them and for descriptive matter.

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HERE IS THE EVIDENCE

No hand work or shoveling required when Williams buckets are used. See this three-yard Williams bucket at work. See how it cleans up the deck of this scow, clean as a floor. This is one of several of this type purchased and used by the Bradley Contracting Company of New York City. This bucket is handling earth and stone, the result of excavation work in the Lexington Ave. Subway.

When you want—

REAL EFFICIENCY and a bucket that will do **REAL WORK** send for a **WILLIAMS**.

WE GUARANTEE

a saving of 25% to 50% in maintenance cost over any other bucket made.

This means something to you, Mr. Contractor.

It means a great deal to you to have a bucket **ALWAYS READY** for **SERVICE**.

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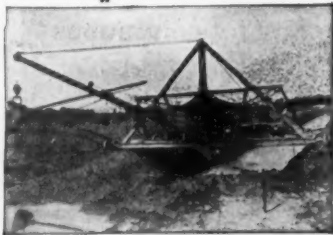
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For Ditch, Drainage and Irrigation Excavation of All Kinds—

THE BAY CITY LAND DREDGE

can be used to a big advantage and profit. Also invaluable for water work, as dredge can be easily mounted on float. Can be dismantled, handled on wagons over country roads, reassembled at small cost and used to advantage on small jobs. Self-propelling, quick and economical in operation, low operating and maintenance costs, large capacity, gasoline-engine driven, are a few of its many advantages.

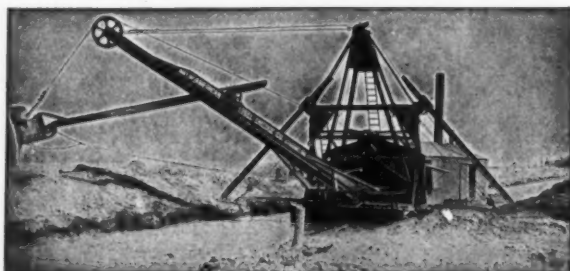


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American Steel Dredges

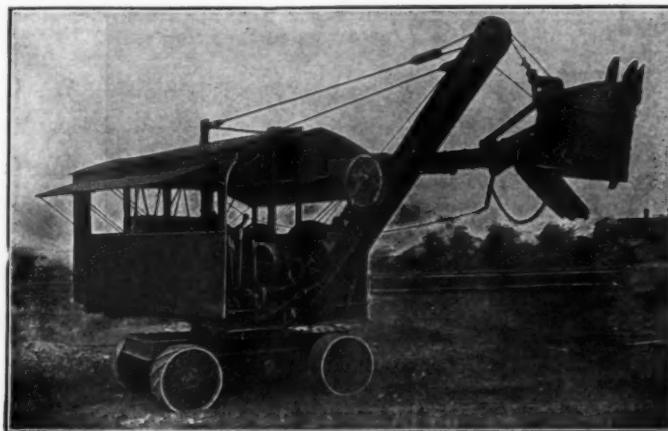


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Prompt Shipment. Send for New Catalog.

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FT. WAYNE, IND.

Fairbanks Gasoline Traction Shovels



$\frac{3}{4}$ Cu. Yd. Full Circle Revolving Gasoline Operated Shovel.

The original and only strictly one-man shovel manufactured.

Operated by internal combustion gasoline engine, thus dispensing with fireman and expenses incident to fuel and water hauling necessary with steam operated shovels.

Mounted on special wide traction wheels, thus dispensing with laying of track and men in pits.

Most practical and economical shovel manufactured for road, street, quarry, cellar or pit work.

Built in standard traction and full circle revolving.

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The Fairbanks Steam Shovel Co.

Dept. M.

MARION, OHIO, U. S. A.

STEAM SHOVELS GASOLINE SHOVELS DIPPER DREDGES

REPRESENTATIVES

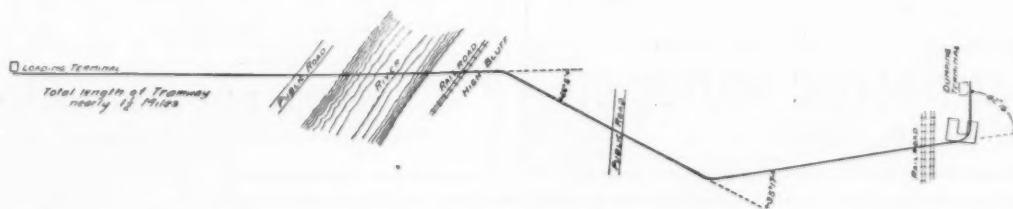
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As to Curves in Tramways

Until the advent of the Lawson Tramway, the curve has been a point to be avoided at almost any cost—necessarily so because of the severe side strain imposed upon the tall towers inseparable from the bucket tramways. There is no room to discuss this in an advertisement, but it is fully treated in our Bulletin H, along with other details and adaptations. The curve or angle presents almost no difficulties in the Lawson Tramway. The construction is such that side strain is entirely eliminated except the negligible strain arising from the traction rope. There are no towers—the structure is close to the ground—and the added expense for the angle is almost nominal.



The line cut shows one Tramway that has been in successful operation for several years. The total length is a little under $1\frac{1}{2}$ miles. There are three curves aggregating a total of $145^{\circ} 38'$, or very nearly a complete half turn. It is operated with 80 cars, each carrying from 1200 to 1500 lbs. of rock in addition to the weight of the car. The speed is 400 ft. per minute, and the total traffic is 700 tons per day. There is a grade of about 100 ft. in the total length, all against the load. The final curve of nearly a right angle is on the top of the main mill building. The tramway crosses several public roads, two railroads, and one river, the last on a span of about 700 ft.

While it is manifest that a straight line is preferable and naturally the cheapest, the Lawson Tramway has no limitations in regard to curvature. Any number of angles can be negotiated at an increase of cost which is almost nominal.

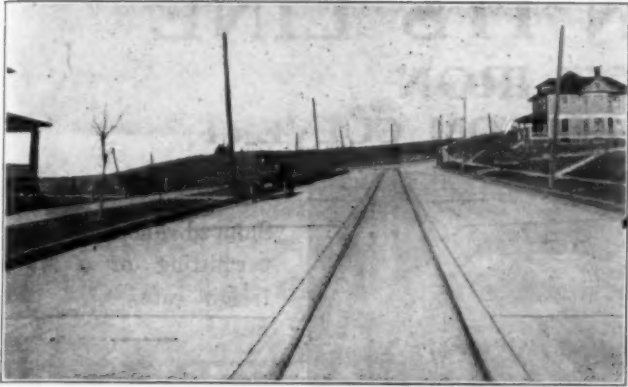
Our Bulletins A and B will be found interesting, and the services of our Engineering Department are placed at the disposition of our clients. Lay your case before us with as complete data as possible, and we will give it our best attention.

Very respectfully,

AMBURSEN COMPANY,

(Tramway Department)

61 Broadway, New York City



20th STREET, SIOUX, CITY, IOWA
showing Elastite Joints laid longitudinally with street
car track and curbs, and across the street every 30 feet.

CAREY
Elastite
NAME REG. U.S. Patent Office
**EXPANSION
JOINT**
"The Sandwich Joint"

Eliminates the expensive pouring equipment and the wood spacing strips, and absolutely prevents the formation of faulty joints either from carelessness or intention.

The installation of ELASTITE requires less than half the labor necessary to install a proportionate amount of poured-joint and there is no uncertainty regarding its future operation. Write for literature.

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Street Paving in the South

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are a few of the Southern cities
that recognize the superiority of

**AZTEC
ASPHALT**

Contractors find from actual experience that they can lay a greater yardage with Aztec than with mineral asphalts.

Aztec is not affected by heat or cold, and can therefore be used with assurances of certain success in any climate.

Endorsed by leading Asphalt Experts, Highway Officials, Engineers, Contractors, etc.

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The CUMMER One-Car ASPHALT PLANT

Capacity 2000 Square Yards 2-inch Top or Macadam Daily

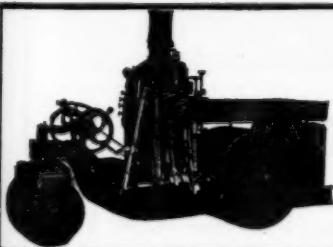
The CUMMER ROAD ASPHALT PLANT

Two Sizes. Three Units. Capacity 750 and 1000 Square Yards 2-inch Top or Macadam Daily

THE F. D. CUMMER & SON COMPANY, CLEVELAND, OHIO

Plants in Stock.

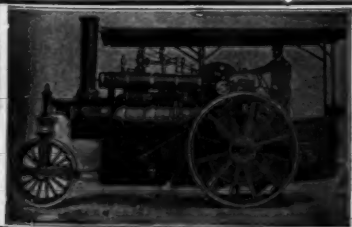
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**The Kelly-Springfield
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Are fully described in our
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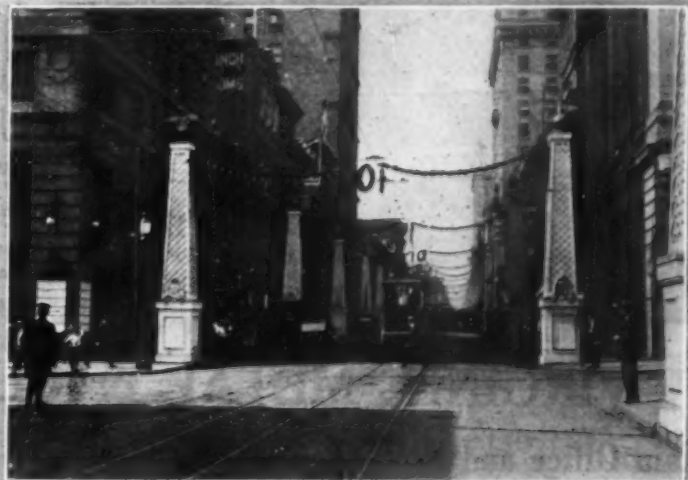
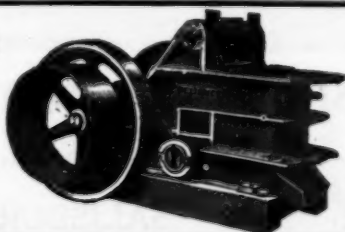
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Universal Road Machinery Co.

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Baltimore St., Baltimore, Md., filled with
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Write for booklet and prices.

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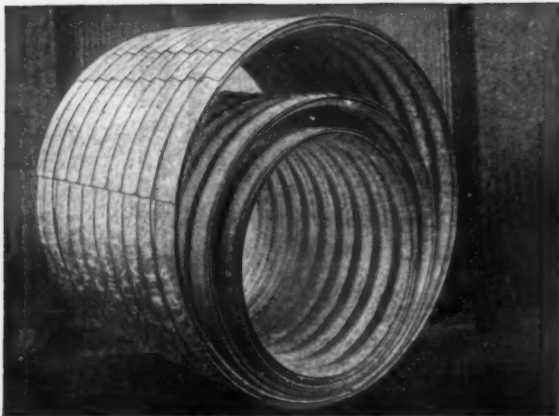
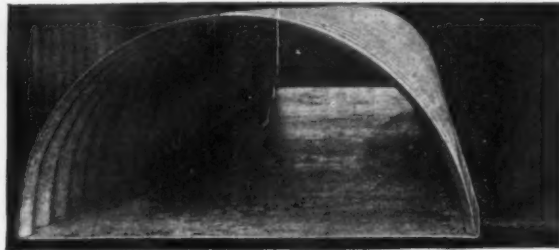
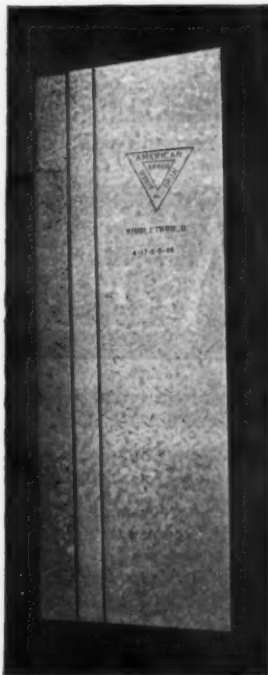
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ARMCO HALF-CIRCLE FLAT-BOTTOM CULVERT

Combining the strength of the arch construction with the durability of ARMCO Rust-Resisting Iron.

A practical, permanent and economical solution of all drainage problems where sufficient headroom is not available to install full circle pipe.

Ideal
for streets
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driveways.



Shipped knock-down, permitting of a low freight rate.

Note the manner in which these arches are nested for shipping, absolutely preventing spreading and insuring their arrival in perfect condition, ready to install.

A card from you will bring full information and prices by return mail. Write us now.

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"Armco Quality Stands the Test—Dixie Service Does the Rest"



GOOD ROADS

In building good roads you should use the
BEST CULVERTS

None better than

Virginia Metal Culverts

Tested and approved by the United States Government and the largest railroads in the country.

Made of AMERICAN INGOT IRON.



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THE RED "S" CULVERT—

The Red "S" culvert is manufactured only by this company, and every culvert you see with the big Red "S" on it, you will find that it has the angle iron reinforcements. The Red "S" is the STRONGEST on earth.

RED "S" stands for "Salisbury," "Strength," "Service" and "Stability." There is not a point in these culverts that can be improved upon. We make them as perfect as human skill can make them, and we sell them at a price which allows us to make them GOOD.



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Guaranteed 25 Years.

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If you are contemplating installing a culvert that will last for years to come, buy our

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We also highly recommend our

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"GENUINE OPEN HEARTH IRON"

Corrugated
Galvanized

CULVERTS



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Triangle Brand on Every Sheet
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Low relative prices and high quality won't mix.
These culverts are sold on quality basis only.

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FOR BALLAST, CONCRETE, MACADAM, ETC.

Large Output—Prompt Shipments.

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BEST TESTERS AND MOST DURABLE

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As one Government Irrigation Engineer said:

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CORRUGATED CULVERTS

"have shown no indication of deterioration
after several years' use"



He spoke with EXPERIENCE.
Thousands of feet of "ACME" (Nestable) Corrugated Culverts are in use in various United States Government works.

They "have shown no indication of deterioration" for the very simple reasons that "ACMES" are made not only of remarkably rust-resisting NO-CO-RO METAL (99.90% pure), but also of NO-CO-RO METAL of extra heavy thickness, galvanized with not less than two ounces of prime spelter per sq. ft. on exposed surfaces. In other words, there's material and QUALITY in "ACME" (Nestable) Culverts—which is responsible for their PERMANENCY. There is full data in our Catalog G-9.

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MANUFACTURERS
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Proposals advertised in the Manufacturers Record bring good results.

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Quarries—OGLESBY, GA.

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and Economical Road Work use the Galion Steel Reversible Road Machine.
A strong machine having all the improvements of others and many original
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GALION PREMIER STEEL REVERSIBLE ROAD MACHINE

is simplest grader built, in construction and operation. Has fewest
number of working parts of any grader on the market. You only
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SOUTHERN BRANCH OFFICES

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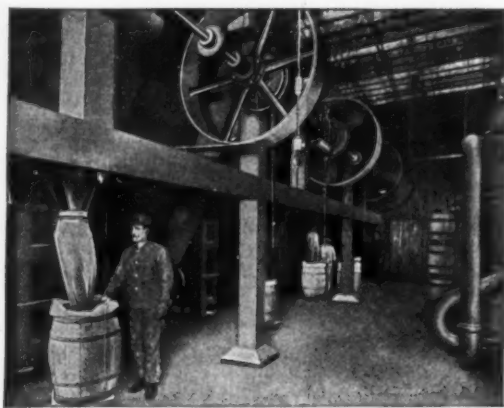
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You can readily convince yourself to the contrary by investigating the operation of the

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Now consider that this factor of dustless operation, with all its practical importance, is merely an incidental advantage which the Raymond System gives in providing great economy of production, perfect uniformity of material, any desired fineness of product and elimination of much otherwise necessary conveying machinery.

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We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

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Stedman's Disintegrators

For Grinding and Pulverizing
OIL CAKES, TANKAGE,
COAL, CLAY, BONES, Etc.

See our New Catalogue No. 12.

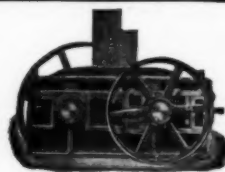
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Especially suitable for drying all kinds of GRANULAR MATERIAL

HERSEY MANUFACTURING CO.

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The C.O. BARTLETT AND SNOW CO.
CLEVELAND, OHIO, U.S.A.

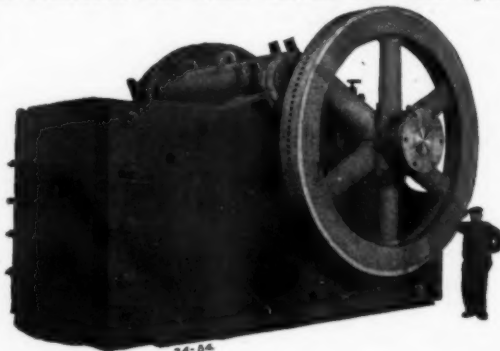
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Designed for Use in Connection with Steam Shovels with Feed Openings, 24"x36 to 84"x60". Capacity up to 700 tons per hour.

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M4-29

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M316.1

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**Cottonseed Oil Machinery
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Hydraulic Presses
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Cake Formers Meal Cookers
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Complete Equipment Latest and Best Improvements

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**Shuttles, Spools and
Bobbins**

Loom Harness and Reeds.
Rawhide and Leather Pickers of all kinds.
Wire Heddles, Heddle Frames and Wire Goods.
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Everything Necessary for the Press Room. Write us for Prices and Descriptive Circulars.

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Pneumatic Seed Cleaners.
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To Present and Prospective Users of Motor Trucks:

EFFICIENT truck service—as rendered by The White Company—has two distinct functions: First—*Service at the time of purchase*; Second—*Service following the sale*.

By far the most valuable to the truck owner is the *first* named. The truck buyer will feel secure in his choice when he decides upon the White. He is entitled to the assurance of *selection to fit his needs*—and to enjoy this he must have the counsel and co-operation of engineers and transportation analysts who are not only most highly skilled in putting *built-in service* into trucks, but capable of telling the purchaser what he should have to meet his particular needs.

Complete truck service—White truck service—begins the moment the prospective buyer indicates his willingness to have the economies of motor truck use proved to his satisfaction.

White engineers have not only developed a product which in itself demonstrates that a White truck is the *right* truck, but their service in advance of the sale insures the buyer getting the *right White*.

WHITE Supremacy Is the Result of Double Engineering Efficiency

—an efficiency that is applied with equal fidelity to both tasks. In such service there is protection against buying a truck larger than one needs—or of unsuitable design and equipment—or against buying a truck that is too small for the work it is to do.

The truck for *your* job—fitted to *your* needs—given an individuality that means perfect adaptability to *your* hauling or delivery problems—is the truck The White Company is prepared to make for you.

Great fleets of Whites—owned and daily operated by scores of the largest concerns in America—afford ample proof of White efficiency.

The point we emphasize here and now—at a time when proper attention to the home demand and the home market is so vital a thing—is that the very same efficiency which has made White supreme among the big users of trucks is

at the command of the one who requires only three trucks, or two, or one.

This is an invitation to any person—of whose business the hauling or delivering of raw products or finished merchandise is a part—to write to The White Company for complete details regarding prepurchase service.

Your request for information will have the immediate attention of transportation analysts—their reply being based upon the requirements of your own hauling problem.

White trucks are of all sizes—for all uses. They are doing profitable work in cities, in towns, in country, in camp, on milk routes, with fire departments—under every condition and at an endless variety of tasks.

Their leadership in all fields is a daily demonstration of sturdy character, mechanical correctness and high quality.


THE WHITE COMPANY
CLEVELAND

LARGEST MANUFACTURERS OF COMMERCIAL MOTOR VEHICLES IN AMERICA

New York - - - - - Broadway at 62nd Street
Chicago - - - - - 2635-2645 Wabash Avenue
Boston - - - - - 930 Commonwealth Avenue
San Francisco - - - Market Street and Van Ness Avenue
Baltimore - - - - - Mt. Royal and Guilford Avenues

Philadelphia - - - - 216-220 North Broad Street
Pittsburgh - - - - - Craig Street and Baum Boulevard
Atlanta - - - - - 63-65 Ivy Street
St. Louis - - - - - 3422 Lindell Boulevard
Washington - - - - - 1233 20th Street, N. W.

Seattle - - - - - 1514 Third Avenue
Memphis - - - - - 278-280 Monroe Avenue
Newark - - - - - 33-35 William Street
Dallas - - - - - 2025-2027 Commerce Street
Toronto - - - - - 14 Alexander Street

OPPORTUNITIES IN THE SOUTH

— FOR —

Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material unbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.

Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

THE WEST POINT ROUTE

Atlanta & West Point Railroad

THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for

Truck, Fruit, Stock and General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities. Write for information.

E. S. CENTER, General Agent, ATLANTA, GA.

Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the Illinois Central Railroad

ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA

IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI

FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 East 11th Place, CHICAGO, ILL.

To the

MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

J. M. MALLORY, Industrial Agent
SAVANNAH, GEORGIA

Manufacturers Should Investigate The Advantages of Tidewater Virginia

Tidewater Virginia already contains many flourishing industries, but there is ample room for several times the number. All the requisites of broad industrial development are here to an unusual degree.

This section possesses complete water and rail transportation facilities which extend into those nearby parts of the country that have unlimited supplies of mineral, timber, agricultural and other resources in great variety; and these shipping facilities are equally satisfactory for the distribution of finished products in the most profitable markets of this country as well as in other parts of the world.

Efficient labor can be had, and when it is necessary to bring it in from other sections it soon becomes contented, due to the healthful equable climate, the abundance of wholesome food and the considerate treatment of the residents.

The largest coal fields of America are traversed by three big railway systems which have their tidewater termini in this section, and satisfactory steam power can be easily produced, or if electric power be wanted, the Virginia Railway & Power Co., which supplies electric light and power throughout this section, offers service that is modern and complete in every way.

So, no matter what the nature of the industry, this territory can abundantly furnish all the essentials of profitable manufacture; and manufacturers seeking sites for new or branch plants should closely investigate conditions here.

The Virginia Railway & Power Co., which is thoroughly acquainted with the industrial and commercial resources and advantages of the territory it serves, and with full, warranted faith in the future of this vicinity, wants to help manufacturers and business men in selecting their sites, and will be very pleased to supply those interested with detailed information, so that every phase of the matter can be intelligently studied.

Virginia Railway and Power Company

RICHMOND

NORFOLK

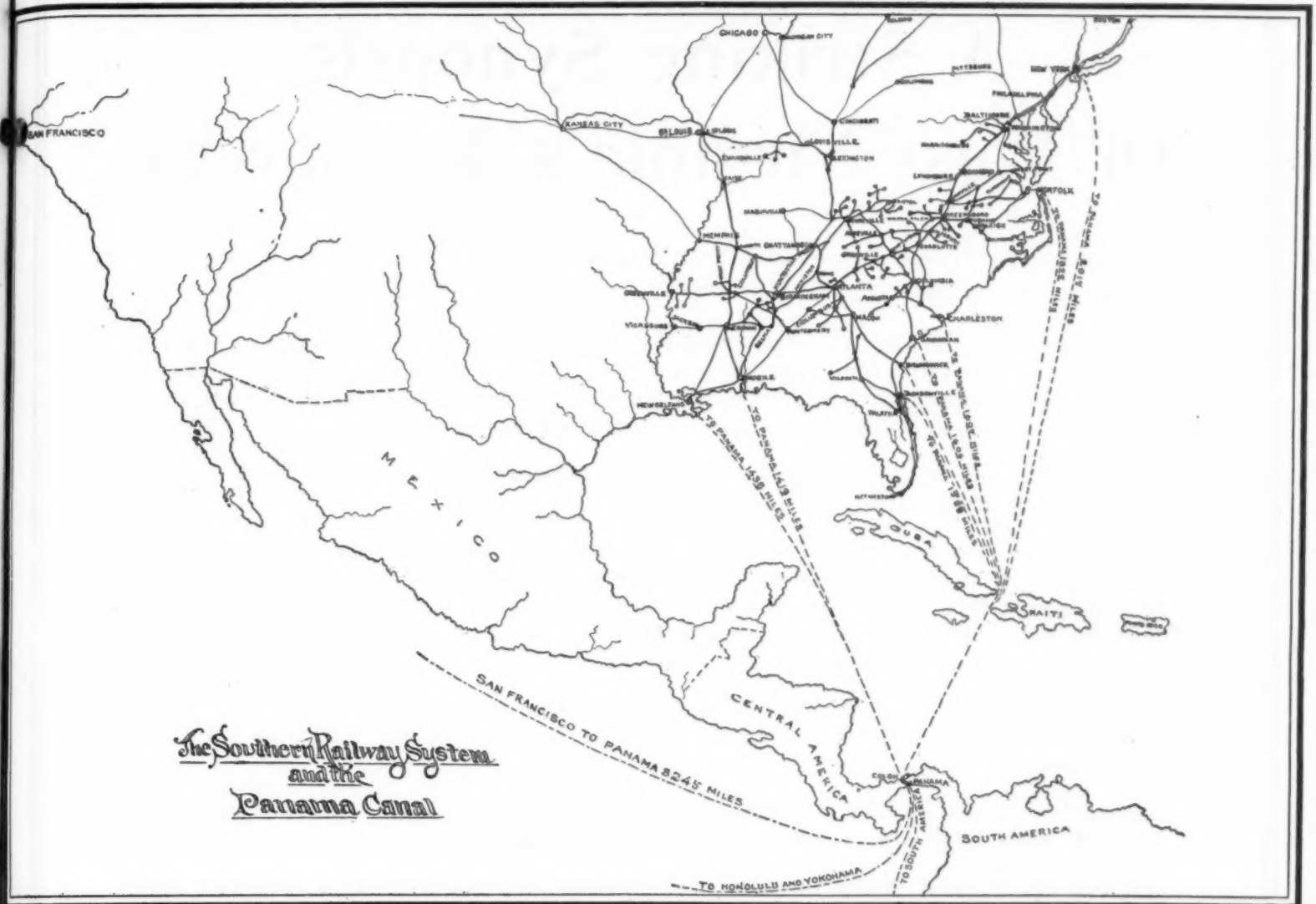
PETERSBURG

PORTSMOUTH

SUFFOLK

VIRGINIA

The Map Tells the Story



Get Closer to South American Trade

Locate your factory amid the South's great supplies of raw materials—Cotton, Timber, Iron, Steel, Clays and Earths—where practically inexhaustible Coal supplies are convenient and cheap, where hydro-electric developments have made available more than a million horse-power, and where reliable labor is plentiful at reasonable wages.

The South American Agent of Southern Railway Company will help you find markets for your products in Central and South America.

If you want to reduce your manufacturing costs, establish a distributing warehouse, or locate in America's most charming home section, let us have an industrial agent call on you and tell you, free of cost, about the advantages of the South and Southern Railway service.

Virginia	Alabama
North Carolina	Mississippi
South Carolina	Tennessee
Georgia	Kentucky
Florida	Southern Indiana
Southern Illinois	

M. V. RICHARDS

Industrial and Agricultural Commissioner

Room 52

Washington, D. C.

Southern Railway
Mobile & Ohio Railroad
Georgia Southern & Fla. Ry.
Virginia & Southwestern Ry.
Southern Ry. in Mississippi

A Striking Synopsis Of West Virginia's Resources

In a synopsis covering the resources of West Virginia, Dr. I. C. White, State Geologist, gives the following interesting facts:

"Extending from the Ohio River on the West to within 50 miles of tidewater at Washington, or only 80 miles from Baltimore on the east, she is nearer the great centers of population and manufacturing industry than any other State, and thus possesses natural advantages of immense value in marketing her products.

The central portion of the Appalachian basin, holding the richest coal fields in the world, lies entirely within her area.

Within this zone are found the purest and greatest variety of coals in the United States, or the world, for that matter; useful for every purpose—steam, domestic, coking, gas, splint, cannel, smokeless, low volatile, high volatile, ranging in B. T. U. from 14,000 to 15,500 and underlying 6,000,000 acres, the quantity being conservatively estimated at 160,000,000,000 tons.

West Virginia has 300,000,000 tons of excellent iron ores in close proximity to vast limestone deposits suitable for flux, cement or high grade lime, and near splendid coking coal.

She has enormous resources in clays and shales for every kind of brick—fire, common, pressed; also sewer pipe, roofing tile, and all kinds of pottery ware.

She has the highest grades of glass sand, in boundless quantity, near both coal and natural gas.

See has more high grade petroleum and more natural gas than Pennsylvania.

She has 9,000,000 acres of forests, 1,500,000 acres of which the woodman's axe is yet unknown.

She has a fertile soil, finely adapted to agriculture, horticulture, grazing and dairying.

Her yields of apples, peaches, pears and all small fruits cannot be excelled anywhere, in either quality or quantity per acre.

Abundant rainfall (45 inches) well distributed throughout the year insures perennial crops, copious springs and great undeveloped water-power resources for her rivers."

Through this country of natural richness almost unrivalled, which has been so well described in the above, the Baltimore & Ohio railroad runs, its various lines tapping the sections in which these resources lie, and connecting them with the seaboard and the great centers of population and of business.

The Industrial Department of the Baltimore & Ohio Railroad will furnish detailed information to those who are interested in West Virginia.

Baltimore & Ohio Railroad

W. W. WOOD, General Industrial Agent
Baltimore, Md.

Views of Noted Experts On the Appalachian South

Many noted experts have told of the marvelous resources in soil, climate and minerals of the mountain region known as "The Land of the Sky," through the very heart of which the Clinchfield runs. Of it Judge Kelly of Pennsylvania, at that time known as "The Father of the House of Representatives," said:

"It is the most glorious country upon which my feet or eyes ever rested.

"As to the mountainous region of the South, it is richer in natural wealth and in advantages for the development of that wealth, it has a finer climate, better water and higher conditions of health than any region of which I have any knowledge, and is withal one of the most beautiful regions of the world."

General Thos. L. Rosser, for some years chief engineer of the Northern Pacific Railroad, wrote of the immediate section of Southwest Virginia through which the Clinchfield line has been built:

"It is a region without a peer in wealth of timber, coal and iron ore."

Prof. N. S. Shaler, of Harvard University, in *Scribner's Magazine* for October, 1890, said of this section:

"We find a climate resembling in its range of temperatures those which characterize the most favored regions of the world, and it is there, perhaps, we may look for the preservation of our race's best characteristics."

Edward Atkinson, the noted political economist of Boston, in 1890 wrote:

"When this great section of heavily timbered mountain ranges and broad, high valleys, sometimes called 'The Land of the Sky,' which had been kept from view by the surrounding pall of slavery, first began to be opened, the writer ventured to describe it, with the Cumberland and Piedmont plateaus on either flank, and the high uplands of Georgia and Alabama on the South, as comprising 'an area nearly as large as France and twice the area of Great Britain,' containing a potential in agriculture equal to either, and mineral and timber equal to both combined."

Of the Ohio Valley, which through this line will pour its wealth of travel and traffic to the South, and of the Piedmont South, two regions forever linked by this road, Prof. Shaler said:

"Within a century the area occupied by these States is likely to contain a larger population than that which now exists in all English-speaking countries. Although this population is destined to be to a great extent engaged in mining and manufacturing, there is room in this country for an agricultural people exceeding in numbers the present population of the United States."

Let us tell you of the special opportunities in the Clinchfield Territory for the investor, manufacturer and farmer.

Carolina, Clinchfield & Ohio Rwy.

"The Road of Opportunity"

R. F. Brewer, Industrial Agent

JOHNSON CITY, TENN.

“LIVE STOCK FARMING IN FLORIDA”

Under the above title we have just completed an interesting, illustrated booklet, the purpose of which is to aid in the development of Florida's unparalleled agricultural resources.

After years of careful observation and investigation we have become convinced that the live stock industry is the correct basis upon which to create in Florida one of the greatest agricultural States in the Union.

In making this statement it is not intended to minimize the wonderful advantages and opportunities Florida offers to the fruit grower and truck gardener. On the contrary, Florida's growth as a live stock State will mean a corresponding growth of the trucking and fruit-growing interests. It means a vast increase in capital for the general development of the State, besides the greater fertility of the soil that will result.

This new booklet not only tells how Florida is adapted for live stock raising, but also points out the reasons for this, and gives examples of successful work in this line.

It also deals with the possibilities of dairying, hog and sheep raising and the opportunities for successful poultry raising.

The information given is authentic. It comes from some of the best authorities in the country, both in and out of Florida. The facts as presented will prove convincing to the live stock farmer wherever he may be found that the live stock business in Florida will yield as great or greater profits than he has ever before received.

The time to engage in the live stock industry in Florida is at hand.

Copies of "Live Stock Farming in Florida" will be gladly mailed to those desiring to investigate this opportunity.

FLORIDA EAST COAST RAILWAY

(FLAGLER SYSTEM)

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

HOMESEEEKERS' RATES FOR 1915

Seaboard Air Line Railway

The Progressive Railway of the South

Announces the establishment of attractive Round-Trip Homeseekers' Rates to Progressive Florida.

		FROM	
		WASHINGTON, D. C.	CINCINNATI, OHIO
		January 12th, February 9th and FIRST and THIRD TUESDAYS in each succeeding month.	January 5th and 19th and FIRST and THIRD TUESDAYS in each succeeding month.
TO	TICKETS GOOD FOR 21 DAYS		
NORTH FLORIDA			
Lake City	\$22.65		\$27.10
Quincy	24.55		25.60
Tallahassee	24.45		25.60
THE BEAUTIFUL LAKE COUNTRY			
Ocala	25.00		30.00
Orlando	25.00		30.00
Oviedo	25.00		30.00
Leesburg	25.00		30.00
Tavares	25.00		30.00
POLK COUNTY HIGHLANDS			
Bartow	25.00		30.00
PEERLESS PINELLAS			
St. Petersburg, Clearwater, Tarpon Springs, Elfers via Tampa	25.00		30.00
THE FAMOUS MANATEE COUNTY			
Palmetto, Parrish Bradentown, Bee Ridge Sarasota Venice	25.00		30.00

These tickets will be on sale at Washington, D. C., January 12th and February 9th, and two dates in each month thereafter. At Cincinnati on January 5th and 19th, and two dates in each succeeding month—the FIRST and THIRD TUESDAYS—good for 21 days. Stopovers south of Jacksonville going and returning.

The rates and service from The Nation's Capital, WASHINGTON, offers splendid opportunity to the people from the Eastern States to make a Florida trip cheaply and comfortably.

The CINCINNATI rates offer a similar opportunity to the people of the Central States.

You can find attractive openings in the progressive State of Florida. We shall be glad to answer your inquiry for complete information.

SEABOARD AIR LINE RAILWAY

The Progressive Railway of the South

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

CLASSIFIED INDEX OF ADVERTISEMENTS.

- Abrasive Materials.**
Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**
Baltimore Audit Co., Baltimore, Md.
- Accumulator. (Hydraulic.)**
The French Oil Mill Mch. Co., Piqua, Ohio.
- Acetylene Service.**
Prest-O-Lite Co., Inc., The Indianapolis, Ind.
- Adding Machines.**
Barrington Adding Machine Co., Detroit, Mich.
- Agricultural Implements.**
Myers & Bro., F. E. Ashland, O.
- Air Compressors. (Stationary and Portable.)**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., Chicago, Ill.
Clayton Air Compressor Works, Cambridge, Mass.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.
- Aluminum Products. (Bars, Sheets, Tubes.)**
Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**
Frick Co., The, Waynesboro, Pa.
York Mfg. Co., York, Pa.
- Anti-Friction Metals.**
Bailey-Libby Co., Charleston, S. C.
Dodge Mfg. Co., Mishawaka, Ind.
- Architects.**
Diehl, Wm. Newton, Norfolk, Va.
Gastlin, W. R., Hopkinsville, Ky.
Milburn, Heister & Co., Washington, D. C.
Sirtine, J. E., Greenville, S. C.
- Architects' Supplies.**
Starrett Co., L. S., Athol, Mass.
Weber & Co., Philadelphia, Pa.
- Architectural Iron Work.**
Boiles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Schreiber & Sons Co., The, Cincinnati, O.
Snod Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) [Arc and Incandescent.]**
- Art Glass.**
Hinswanger & Co., Memphis, Tenn.
- Asbestos.**
Asbestos Protected Metal Co., Pittsburgh, Pa.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**
Asbestos Protected Metal Co., Pittsburgh, Pa.
Johns-Manville Co., H. W., New York, N. Y.
- Asphalt.**
Gulf Refining Co., Pittsburg, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**
Cummer & Son Co., F. D., The, Cleveland, Ohio.
- Automobile. (Gasoline Passenger.)**
White Co., The, Cleveland, Ohio.
- Automobiles. (Second Hand.)**
Mar-Del Mobile Co., Baltimore, Md.
- Axles. [See Car Wheels, Axles and Trucks.]**
- Babbit Metal. [See Anti-Friction Metal.]**
- Bakelite Dielects.**
Continental Fibre Co., Newark, Del.
- Ballast. (Railroad.)**
American Ballast Co., Knoxville, Tenn.
Bald Mountain Quarry, Newson, N. C.
Chicamauga Quarry & Const. Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Weston & Brooker Quarry Co., Columbia, S. C.
- Bankers and Brokers.**
Delaware Trust Co., Wilmington, Del.
Edwards, Geo. B., New York, N. Y.
Electric Bond & Share Co., New York, N. Y.
Halsey & Co., N. W., New York, N. Y.
Mercantile Trust & Deposit Co., Baltimore, Md.
New First National Bank, Columbus, O.
Nuvoen & Co., John, Chicago, Ill.
Penbody, Houghtaling & Co., Chicago, Ill.
Southern States Develop't Co., New York, N. Y.
- Banks.**
First National Bank, Baltimore, Md.
First Nat'l Bank, of Key West, Key West, Fla.
First National Bank, Richmond, Va.
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.
New First National Bank, Baltimore, Md.
National Exchange Bank, Baltimore, Md.
Provident Savings Bank & Trust Co., Cincinnati, O.
- Bank and Office Railings and Grilles. (Iron)**
Boiles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Duff & Co., Baltimore, Md.
Duff, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**
American Barge Co., of New York, N. Y.
- Bar Iron. (Refined and Galvanized.)**
Bourne-Fuller Co., The, Cleveland, Ohio.
Lackawanna Steel Co., Lackawanna, N. Y.
- Bars. (Steel, Rounds, Flats and Squares.)**
Gulf States Steel Co., Birmingham, Ala.
Pardee Works Co., Perth Amboy, N. J.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**
Cincinnati Iron & Steel Co., Cincinnati, O.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Laclede Steel Co., St. Louis, Mo.
- Bearings. (Oilless.)**
Metalline Co., Long Island City, N. Y.
- Bedford Stone**
Bedford Steam Stone Works, Bedford, Ind.
- Belting. (Leather, Canvas, Rubber.)**
American Supply Co., Providence, R. I.
Bailey-Libby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Druid Oak Belting Co., Inc., Baltimore, Md.
Frederick Belting Co., St. Louis, Mo.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
Main Belting Co., Phila., Pa.
Schieren Co., Chas. A., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
- Belting. (Chain.)**
Bartlett & Snow Co., C. O., Cleveland, O.
Caldwell & Sons Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicotown, (Philadelphia) Pa.
- Belt Cement.**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Conveyors.**
Jeffrey Mfg. Co., Columbus, O.
- Belt Dressing.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing. (Leather.)**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing and Supplies. [See Belting. Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**
Church & Dwight Co., New York, N. Y.
- Billets. (Basic Open Hearth Quality.)**
Gulf States Steel Co., Birmingham, Ala.
- Bins (Steel)**
Merritt & Co., Camden, N. J.
- Blackboards. (Slate.)**
East Bangor Co., Slate Co., The, East Bangor, Pa.
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Grooved.)**
American Oresote Works, New Orleans, La.
- Block Fillers**
Barrett Mfg. Co., Phila. Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Matewan, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Blow Torches. (For Soldering and Brazing.)**
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Blueprinters.**
Childrey Co., Richmond, Va.
- Boilers.**
Babcock & Wilcox Co., New York, N. Y.
Bailey & James Boiler & Mch. Co., Joplin, Mo.
Cameron & Barkley Co., Charleston, S. C.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Conestoga Boiler Works, Coatesville, Pa.
Cole Mfg. Co., E. D., Newnan, Ga.
Gibbs Machinery Co., Inc., Columbia, S. C.
Harris Bros. Co., Chicago, Ill.
Hartley Boiler Works, Montgomery, Ala.
Jeffrey-Grimmer Machinery Co., Philadelphia, Pa.
Kaiser Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works, Birmingham, Ala.
New York Central Iron Works Co., Hagerstown, Md.
Phoenix Iron Works Co., Meadville, Pa.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Vaik & Murdoch Iron Works, Charleston, S. C.
York Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Boiler Covering.**
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**
Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, O.
Upon Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**
Fidelity & Deposit Co. of Balto., Baltimore, Md.
- Bottling Outfits.**
Viller Mfg. Co., Milwaukee, Wis.
- Brass Goods.**
Bailey-Libby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Lunkenheimer Co., The, Cincinnati, Ohio
Powell Co., Wm., Cincinnati, O.
- Brass Railings and Grilles.**
Newman Mfg. Co., Cincinnati, Ohio
- Brewers' Machinery.**
Viller Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**
Hood Brick Co., B. Miffin, Atlanta, Ga.
- Brick. (Building.)**
Adamantine Clay Products Co., North Mountain, W. Va.
Am. Enamelled Brick & Tile Co., New York, N. Y.
Hood Brick Co., B. Miffin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Corp., Johnson City, Tenn.
Scott Brick Co., Alex. A., Knoxville, Tenn.
Southern Face Brick Exchange, Birmingham, Ala.
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**
Killian Fireproofing & Brick Works, Killian, S. O.
Louisville Fire Brick Works, Highland Park, Ky.
Mexico Brick & Fire Clay Co., Mexico, Mo.
Fomona Terra-Cotta Co., Fomona, N. O.
Standard Brick Co., Macon, Ga.
Stevens' Sons Co., H. Macon, Ga.
Union Mining Co., Mt. Savage, Md.
- Brick. (Paving.)**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingis Shale Brick Co., Birmingham, Ala.
Dunn Wire-Out-Lug Brick Co., Conneaut, Ohio
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.
- Brick and Clayworking Machinery and Supplies.**
Chase Fdry. & Mfg. Co., Columbus, O.
Fernholz Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Gallion, O.
Steele & Sons, J. C., Statesville, N. C.
- Bridges. (Concrete.)**
Cunningham Construction Co., Shreveport, La.
Lutes, Daniel B., Indianapolis, Ind.
Requarth Co., O. W., Charlotte, N. C.
Turner, J. A. P., Minneapolis, Minn.
- Bridges. (Rolling Lift.)**
Scherser Rolling Lift Bridge Co., Chicago, Ill.
- Bridges. (Steel.)**
American Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, Ohio.
Chicago Bridge & Iron Works, Chicago, Ill.
Cunningham Construction Co., Shreveport, La.
East St. Louis Bridge Co., East St. Louis, Ill.
Oregon Bridge Co., Lebanon, Ohio.
Richmond Structural Steel Co., Richmond, Va.
Tuchersch Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
- Bridge and Structural Iron Paints.**
Chattanooga Paint Co., Chattanooga, Tenn.
- Bridge Builders. (Timber.)**
Murray & Co., Inc., W. D., Norfolk, Va.
- Brimstone.**
Union Sulphur Co., New York, N. Y.
- Buckets. (Clam Shell.)**
Hayward Company, New York, N. Y.
Williams Company, G. H., Cleveland, Ohio.
- Buckets. (Orange Peel.)**
Hayward Co., The, New York, N. Y.
- Buckets. (Dredging, Excavating, Sewer, etc.)**
Hayward Co., New York, N. Y.
Monaghan Mch. Co., Chicago, Ill.
Williams Co., The G. H., Cleveland, O.
- Buckets. (Grab.)**
Hunt Co., Inc., C. W., West New Brighton, N. Y.
- Buckets. (Ore Handling.)**
Caldwell & Son Co., H. W., Chicago, Ill.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicotown (Philadelphia), Pa.
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**
Interstate Const. Co., Louisville, Ky.
Stone & Webster Eng. Corp., Boston, Mass.
Turner, J. A. P., Minneapolis, Minn.
White Companies, J. G., New York, N. Y.
- Building Stone.**
Atlantic Stone Co., Atlanta, Ga.
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**
Harris Bros. Co., Chicago, Ill.
Southern Building Material Co., Norfolk, Va.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**
Metalline Co., Long Island City, N. Y.
- Cables.**
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebing's Sons Co., John A., Trenton, N. J.
- Cables. (Underground.)**
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**
American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**
Amburns Co. (Tramway Department, New York, N. Y.)
Broderick & Bascom Rope Co., St. Louis, Mo.
Fry Mfg. Co., S., Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Roebing's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**
Bliss Co., E. W., Brooklyn, N. Y.
- Canning Machinery and Supplies.**
Robins & Co., A. K., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**
Austin Mfg. Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, O.
Cord, Geo. B., Cincinnati, Ohio
Electric Wheel Co., Quincy, Ill.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., O. W., Inc., West New Brighton, N. Y.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Western Wheeled Scraper Co., Aurora, Ill.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Wheels, Axles and Trucks.**
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
- Cast Iron Pipe. [See Pipe.] [Cast Iron.]**
- Castings. (Aluminum.)**
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**
Columbian Iron Works, Chattanooga, Tenn.
Georgia Car & Locomotive Co., Atlanta, Ga.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Hull's Sons, D. F., Hagerstown, Md.
Lynchburg Foundry Co., Lynchburg, Va.
Phoenix Iron Works Co., Meadville, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Vaik & Murdoch Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**
Columbus Malleable Iron Co., Columbus, Ohio.
General Malleable Co., Warren, O.
Marion Malleable Iron Works, The, Marion, Ind.
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Riverside Steel Casting Co., Newark, N. J.
- Ceilings. (Metal.)**
Edwards Manufacturing Co., Cincinnati, O.
Keighley Metal Cell. & Mfg. Co. S., Pittsburgh, Pa.
- Cement.**
Climchfield Portland Cem. Corp., Kingsport, Tenn.
Dixie Portland Cement Co., Chattanooga, Tenn.
Hartman Cement Co., Wm. G., Philadelphia, Pa.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Kosmos Portland Cement Co., Inc., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Southern States Portland Cem. Co., Rockmart, Ga.
Standard Portland Cement Co., Leeds, Ala.
- Cement Machinery.**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Ailing Engineering Co., J. R., New York, N. Y.
Power & Mining Machinery Co., Oudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Chains. (Dredge, Quarry, Steam Shovel.)**
Welmer Chain & Iron Co., Lebanon, Pa.
- Chemists. (Analytical and Consulting.)**
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
Hunt & Co., Robt. W., Chicago, Ill.
Little Inc., A. D., Boston, Mass.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
Wiley & Co., Baltimore, Md.
- Chloride Accumulator.**
Electric Storage Battery Co., The, Philadelphia, Pa.
- Chucks.**
Morris Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Clamps. (For Concrete Forms.)**
Sterling Wheelbarrow Co., Milwaukee, Wis.
- Clayworking Machinery. [See Brick and Clayworking Mch. and Supplies.]**
- Cleaning Compound. (Floors, Etc.)**
India Alkali Works, Boston, Mass.
- Clocks. (Watchman.)**
Watchman's Clock & Supply Co., New York, N. Y.
- Clutches. (Friction.)**
Affiliated Manufacturers Co., Milwaukee, Wis.
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., The, Philadelphia, Pa.
- Coal.**
Climchfield Coal Corp., Dante, Va.
Climchfield Fuel Co., Spartanburg, S. C.
Consolidation Coal Co., Inc., New York, N. Y.
Tennessee Coal, Iron & R. R. Co., H'mgh'm, Ala.
- Coal Cutters.**
Jeffrey Mfg. Co., Columbus, O.
- Coal Handling Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Guarantee Construction Co., New York, N. Y.
Hayward Co., New York, N. Y.
Hunt Co., O. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicotown (Philadelphia), Pa.
Weller Mfg. Co., Chicago, Ill.
- Coal Tar and By-Products.**
Barrett Mfg. Co., Philadelphia, Pa.
- Coal Tipples.**
American Bridge Co. of New York, N. Y.
- Coke.**
Tennessee Coal, Iron & R. R. Co., H'mgh'm, Ala.
- Cold Store Doors.**
Brecht Co., The, St. Louis, Mo.
- Colleges and Schools.**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Colleges. (Technical.)**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Columns. (Porch, Interior, Pergola.)**
Nickerson Mfg. Co., Knoxville, Tenn.
- Commission Merchants. (Export & Import.)**
Duckett & Co., Inc., A. W., New York, N. Y.
- Concrete Construction. (Reinforced.)**
Berry-Fortune Construction Co., Easton, Ga.
Cunningham Construction Co., Shreveport, La.
Foster-Dreighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Requarth Co., O. W., Charlotte, N. C.
Turner, J. A. P., Minneapolis, Minn.
- Concrete Curb Protector. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Mixers. [See Mixers. (Concrete)]**
- Concrete Reinforcing Bars.**
Carnegie Steel Co., Pittsburg, Pa.
Gulf States Steel Co., Birmingham, Ala.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Laclede Steel Co., St. Louis, Mo.
Pardee Works Co., Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Sweets Steel Co., Williamsport, Pa.
- Concrete Reinforcing Bar Couplings.**
Marion Malleable Iron Works, Marion, Ind.
- Concrete Reinforcing Wire and Wire Fabric**
American Steel & Wire Co., Chicago, Ill.
Roebing's Sons Co., John A., Trenton, N. J.
- Condensers.**
Albarger Pump & Condenser Co., New York, N. Y.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Oreson-Morris Co., Philadelphia, Pa.
Dean Bros., Steam Pump Wks., Indianapolis, Ind.
Westinghouse Machine Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.
- Conductor Pipe.**
Edwards Mfg. Co., Cincinnati, O.
- Contractors. (Concrete.)**
Berry-Fortune Construction Co., Easton, Ga.
- Contractors. (Drainage)**
Thompson & Mosely, Greensboro, N. C.
- Contractors. (Hydro-Electric Developments.)**
Requarth Co., O. W., Charlotte, N. C.

Contractors. (Water Supply.)

Layne & Bowler Co., Houston, Tex.

Contractors Machinery and Supplies. [See also Hoisting Machinery.]

American Clay Machinery Co., The Bucyrus, Ohio.
 American Hoist & Derrick Co., St. Paul, Minn.
 Austin Mfg. Co., Chicago, Ill.
 Beyer Mach. Co., The John F., Ravenna, O.
 Ford Mfg. Co., S. Bangor, Pa.
 Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
 Marine Metal & Supply Co., New York, N. Y.
 Milburn Co., Alex. N., Baltimore, Md.
 Monaghan Mch. Co., Chicago, Ill.
 National Hoisting Engine Co., Harrison, N. J.
 Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
 Sherwood, E. O., New York, N. Y.
 Sterling Machinery Co., New York, N. Y.
 Thaw & Williams, Cincinnati, O.

Conveying and Elevating Machinery.

Amberson Co., (Tramway Department), New York, N. Y.
 Bartlett & Snow Co., C. O., Cleveland, O.
 Caldwell & Son Co., H. W., Chicago, Ill.
 Flory Mfg. Co., S. Bangor, Pa.
 Guarantee Construction Co., New York, N. Y.
 Hunt Co., W. W., Inc., West Brighton, N. Y.
 Jeffrey Mfg. Co., Columbus, O.
 Lidgerwood Mfg. Co., New York, N. Y.
 Link-Belt Co., Nicetown, (Philadelphia) Pa.
 Mathews Gravity Carrier Co., Ellwood City, Pa.
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
 Waller Mfg. Co., Chicago, Ill.

Copperage Stock and Box Shook Machinery.

Gerlach Co., Peter, Cleveland, O.

Coppersmiths.

McMillan Bros., Jacksonville, Fla.

Cordage.

Broderick & Bascom Rope Co., St. Louis, Mo.
 Columbian Rope Co., Auburn, N. Y.
 Waterbury Co., New York, N. Y.

Corn-Mill Machinery.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Starr Co., R. F., Baltimore, Md.
 Wolf Co., Chambersburg, Pa.

Cotton Oil and Products.

American Cotton Oil Co., New York, N. Y.

Cotton Yarns. (Commission Merchants.)

Faulson, Linkroum & Co., New York, N. Y.

Cotton-Gin Machinery.

Carver Cotton Gin Co., East Bridgewater, Mass.
 Continental Gin Co., Birmingham, Ala.
 Gibbs Machinery Co., Inc., Columbia, S. C.
 Murray Co., The, Atlanta, Ga.

Cotton-Mill Machinery.

Draver Co., Hopedale, Mass.
 Mason Machine Works, Taunton, Mass.
 Saco-Lowell Shop, Boston, Mass.
 Whitinsville Spin'g Ring Co., Whitinsville, Mass.

Cotton-Mill Supplies.

American Supply Co., Providence, R. I.
 Whitinsville Spin'g Ring Co., Whitinsville, Mass.

Cottonseed-Oil Machinery.

Buckeye Iron & Brass Works, Dayton, O.
 Burruss Engineering Co., Atlanta, Ga.
 Cardwell Machine Co., Richmond, Va.
 Carver Cotton Gin Co., East Bridgewater, Mass.
 Continental Gin Co., Birmingham, Ala.
 French Oil Mill Machinery Co., Piqua, O.
 Murray Co., The, Atlanta, Ga.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Couplings.

American Spiral Pipe Works, Chicago, Ill.
 Golden's Foundry & Machine Co., Columbus, Ga.
 Wood's Sons Co., T. B., Chambersburg, Pa.

Couplings. (Car.)

Weimer Chain & Iron Co., Lebanon, Pa.

Couplings. (Hose, Air, Gas, Steam and Water.)

National Tube Co., Pittsburgh, Pa.

Coverings. (Pipe, Boiler, etc.)

Johns-Manville Co., W. W., New York, N. Y.
 Southern Asbestos Mfg. Co., Inc., Richmond, Va.

Cranes. (Locomotive.)

American Hoist & Derrick Co., St. Paul, Minn.
 Ohio Locomotive Crane Co., Bucyrus, O.

Cranes. (Traveling, Hand, Power, Hydraulic.)

Lane Mfg. Co., Montpelier, Vt.
 Speidel, J. G., Reading, Pa.

Crayons.

Georgia Talc Co., Asheville, N. C.
 Lowell Orayon Co., Lowell, Mass.

Crosscutting Equipment.

Casey-Hedges Co., Chattanooga, Tenn.
 Struthers-Wells Co., Warren, Pa.
 Walsh & Weider Boiler Co., Chattanooga, Tenn.

Crosscutting Works.

American Crosscutting Works, New Orleans, La.
 Internat'l Crosscutting & Cons. Co., Galveston, Tex.
 National Lumber & Crosscutting Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Slidell, La.
 Southern Wood Preserving Co., Atlanta, Ga.

Crossarms and Pins.

Western Electric Co., New York, N. Y.

Crossarms. (Crosscut.)

American Crosscutting Wks., New Orleans, La.
 Internat'l Crosscutting & Cons. Co., Galveston, Tex.
 National Lumber & Crosscutting Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Slidell, La.
 Southern Wood Preserving Co., Atlanta, Ga.

Crossings. (See Railroad Frogs and Switches.)**Crosstie Machine.**

Standard Portable Saw Mill Co., New Orleans, La.

Crossties. (Crosscut.)

American Crosscutting Works, New Orleans, La.
 Internat'l Crosscutting & Cons. Co., Galveston, Tex.
 National Lumber & Crosscutting Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Slidell, La.
 Southern Wood Preserving Co., Atlanta, Ga.

Crushed Stone. (Road Concrete and Ballast.)

American Ballast Co., Knoxville, Tenn.
 Atlantic Stone Co., Atlanta, Ga.
 Bald Mountain Quarry, Newson, N. C.
 Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
 Kirkpatrick Sand & Cement Co., Birmingham, Ala.
 Weston Brook Quarry Co., Columbia, S. C.

Crushers. (Corn and Cob.)

Grumender Pat. Crusher & Pulv. Co., St. Louis, Mo.
 Jeffrey Mfg. Co., Columbus, O.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Crushers. (Rock.)

Austin Mfg. Co., Chicago, Ill.
 Buchanan Co., Inc., G. G., New York, N. Y.
 Power & Mining Machinery Co., Cudahy, Wis.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Universal Road Mch. Co., Kingston, N. Y.
 Western Wheeled Scraper Co., Aurora, Ill.
 Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Crushing and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Aising Engineering Co., J. R., New York, N. Y.
 Austin Mfg. Co., Chicago, Ill.
 Bartlett & Snow Co., C. O., Cleveland, O.
 Buchanan Co., Inc., G. G., New York, N. Y.
 Grumender Pat. Crusher & Pulv. Co., St. Louis, Mo.
 Jeffrey Mfg. Co., Columbus, O.
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Stedman's Foundry & Machine Works, Aurora, Ind.
 Western Wheeled Scraper Co., Aurora, Ill.
 Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Culvert Pipe. (Cast Iron.)

American Cast Iron Pipe Co., Birmingham, Ala.
 Clow & Sons, J. H., Chicago, Ill.
 Donaldson Iron Co., Kansas, Pa.
 Galloway Iron Works & Mfg. Co., The, Gallon, Ohio.
 Lynchburg Foundry Co., Lynchburg, Va.
 Massillon Iron & Steel Co., Massillon, Ohio.
 Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
 Wood & Co., R. D., Philadelphia, Pa.

Culverts. (Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Armo Culvert Publicity Bureau, Cincinnati, O.
 Atlas Metal Works, Dallas, Tex.
 Canton Culvert and Silo Co., The, Canton, O.
 Dixie Culvert & Metal Co., Atlanta, Ga.
 Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
 Harry Bros. Co., New Orleans, La.
 Lone Star Culvert Co., Houston, Tex.
 National Corrugated Culvert Mfg. Co., Warren, Pa.
 Newport Culvert Co., Inc., Newport, Ky.
 Salisbury Metal Culvert Co., Inc., Salisbury, N. C.
 Tennessee Metal Culvert Co., Nashville, Tenn.
 Virginia Metal & Culvert Co., Inc., Roanoke, Va.

Culverts. (Vitrified Pipe.)

Southern Sewer Pipe Co., Birmingham, Ala.
 Stevens Sons Co., H., Macon, Ga.

Cupola Furnaces.

Paxson Co., J. W., Philadelphia, Pa.

Curb Protector. (Steel.)

Steel Protected Concrete Co., Philadelphia, Pa.

Cutter Grinders.

Vitrified Wheel Co., Westfield, Mass.

Cutting. (Oxy-Acetylene Process.)

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

Cuts. (Half Tone, Line, Etc.)

Alpha Photo Engraving Co., Balto. Md.

Dams. (Reinforced Concrete.)

Berry-Fortune Construction Co., Easton, Ga.

Derricks and Derrick Fittings.

American Hoist & Derrick Co., St. Paul, Minn.
 Beyer Mach. Co., The John F., Ravenna, O.
 Hayward Co., The, New York, N. Y.
 Monaghan Machine Co., Chicago, Ill.

Designers and Illustrators. (Printed Matter.)

Alpha Photo Engraving Co., Baltimore, Md.

Disposal Plants. (Garbage Incinerators.)

Stacy-Bates Co., Minneapolis, Minn.

Ditching Machinery.

American Hoist & Derrick Co., St. Paul, Minn.
 American Steel Dredge Co., Port Wayne, Ind.
 Bay City Dredge Works, Bay City, Mich.
 Fairbanks Steam Shovel Co., Marion, O.
 Gade Excavating Co., Iowa Falls, Iowa
 Hayward Co., The, New York, N. Y.
 Marion Steam Shovel Co., Marion, O.
 Monaghan Machine Co., Chicago, Ill.
 The Automatic Shovel Co., Lorain, Ohio
 Williams Co., The, G. H., Cleveland, O.

Doors. (Steel Rolling.)

Kinnear Mfg. Co., Columbus, O.
 Van Hurlingen, J. M., Atlanta, Ga.

Doors. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Draftsmen.

Childrey Co., Richmond, Va.

Draftsmen's Supplies.

Weber & Co., F., Philadelphia, Pa.

Dredge Chains.

Weimer Chain & Iron Co., Lebanon, Pa.

Dredges. [See Excavating Machinery.]**Drills. (Pneumatic.) [See also Drills Rock and Mining.]**

Drills. (Prospecting.)
 Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Drills. (Rock and Mining.)

Independent Pneumatic Tool Co., Chicago, Ill.
 Jeffrey Mfg. Co., Columbus, O.
 Wickes Bros., Jersey City, N. J.

Drills. (Twist.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
 Morse Twist Drill & Mch. Co., New Bedford, Mass.

Drive Well Points and Well Supplies.

National Tube Co., Pittsburgh, Pa.

Drop Forgings.

American Spiral Pipe Works, Chicago, Ill.

Drop Forging Machinery.

Bliss Co. E. W., Brooklyn, N. Y.

Dry Docks. (Builders of)

American Bridge Co., of New York, N. Y.

Drying Machinery.

American Process Co., New York, N. Y.
 Bailey-Lobby Co., The, Charleston, S. C.
 Buffalo Forge Co., Buffalo, N. Y.
 Coatesville, Boiler Works, Coatesville, Pa.
 Cummer & Son Co., F. D., The, Cleveland, Ohio
 Hersey Manufacturing Co., South Boston, Mass.
 Ruggles-Cole Engineering Co., New York, N. Y.
 Starveant Co., B. F., Hyde Park, Boston, Mass.

Dry Kilns.

Buffalo Forge Co., Buffalo, N. Y.
 Moore Dry Kiln Co., L., Jacksonville, Fla.

Dry Kiln Equipment.

Moore Dry Kiln Co., L., Jacksonville, Fla.

Dumbwaiters. (Hand Power.)

King, Wm. F., Brooklyn, N. Y.
 McKenna Bros. Brass Co., Pittsburgh, Pa.
 Speidel, J. G., Reading, Pa.

Dump Wagons and Wagon Axes.

Troy Wagon Works Co., Troy, O.

Dust-Collecting System.

Buffalo Forge Co., Buffalo, N. Y.
 King Co., F. E., Norfolk, Va.
 South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.

Dynamite. (Industrial and Agricultural.)

Du Pont De Nemours Powder Co., E. I.
 Keystone Nat'l Powder Co., Emporium, Pa.

Dynamometers and Motors.

Asaels Purchasing Co., Wheeling, W. Va.
 General Electric Co., Schenectady, N. Y.
 Fan Electric Mfg. Co., St. Louis, Mo.
 Terry Steam Turbine Co., Hartford, Conn.
 Triumph Electric Co., Cincinnati, O.
 Western Electric Co., New York, N. Y.

Eaves. (Through.)

Edwards Mfg. Co., Cincinnati, O.

Ejectors. (Sewage.)

Lankenheimer Co., The, Cincinnati, O.
 Pacific Flush Tank Co., New York, N. Y.

Electric Machinery. (Dynamoes, Generators, Motors, etc.)

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
 American Elevator & Mch. Co., Louisville, Ky.
 Crocker-Wheeler Co., Amper, N. J.
 Engberg Electric & Mechanical Works, St. Joseph, Mich.
 Fairbanks-Morse & Co., Atlanta, Ga.
 General Electric Co., Schenectady, N. Y.
 Heer Engine Co., Portsmouth, Ohio.
 Lee Electric Co., Baltimore, Md.
 Moore & Co., Edgar M., Pittsburgh, Pa.
 Pan Electric Mfg. Co., St. Louis, Mo.
 Piedmont Electric Co., Asheville, N. C.
 Robbins & Myers Co., Springfield, O.
 Schneider Co., E., Philadelphia, Pa.
 Schroeder Electric Co., Evansville, Ind.
 Sturtevant Co., B. F., Hyde Park Boston, Mass.
 Triumph Electric Co., Cincinnati, O.
 Wilson Mch. Co., Harold R., St. Louis, Mo.

Electrical Contractors, Instruments and Supplies.

Crocker-Wheeler Co., Amper, N. J.
 Economy Fuse & Mfg. Co., Chicago, Ill.
 General Electric Co., Schenectady, N. Y.
 Hill & Co., Walter E., Baltimore, Md.
 Lee Electric Co., Baltimore, Md.
 Levy-Morton Co., Columbus, Ga.
 Piedmont Electric Co., Asheville, N. C.
 Robbins & Myers Co., Springfield, O.
 Electric Light Plants. (Portable.)
 Schroeder Electric Co., Evansville, Ind.

Electro-Magnet. [See Magnet Electro.]**Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]****Elevator****ELECTRIC.**

American Electric Machine & Elevator Co., St. Louis, Mo.
 Atlas Machine Co., Louisville, Ky.
 Current Elevator Co., James H., Cincinnati, O.
 K. C. Elevator Mfg. Co., Kansas City, Mo.
 Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Ohio Elevator & Machine Co., Columbus, Ohio.
 Otis Elevator Co., New York, N. Y.
 Speidel, J. G., Reading, Pa.
 Warsaw Elevator Co., Baltimore, Md.
 Westbrook Elevator Co., Danville, Va.

HAND AND BELT POWER.

American Electric Machine & Elevator Co., St. Louis, Mo.
 Atlas Machine Co., Louisville, Ky.
 Current Elevator Co., James H., Cincinnati, O.
 K. C. Elevator Mfg. Co., Kansas City, Mo.
 Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Ohio Elevator & Machine Co., Columbus, O.
 Otis Elevator Co., New York, N. Y.
 Speidel, J. G., Reading, Pa.
 Westbrook Elevator Co., Danville, Va.

HYDRAULIC.

American Electric Machine & Elevator Co., St. Louis, Mo.
 Current Elevator Co., James H., Cincinnati, O.
 K. C. Elevator Mfg. Co., Kansas City, Mo.
 Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Ohio Elevator & Machine Co., Columbus, O.
 Otis Elevator Co., New York, N. Y.

STEAM HYDRAULIC.

Ridgway & Son Co., The, Coatesville, Pa.

Elevators. (Automatic.)

Mathews Gravity Carrier Co., Ellwood City, Pa.

Elevators. (Portable for Warehouses, etc.)

Economy Engineering Co., Chicago, Ill.

Elevator Bolts.

Upon Nut Co., The, Cleveland, O.

Elevator Buckets.

Caldwell & Son Co., H. W., Chicago, Ill.
 Hendrick Mfg. Co., Carbondale, Pa.
 Jeffrey Mfg. Co., Columbus, O.
 Link-Belt Co., Nicetown (Philadelphia) Pa.

Elevator Enclosures and Cabs.

Rolls Iron & Wire Works, J. E., Detroit, Mich.
 Cincinnati Mfg. Co., Cincinnati, O.
 Dow Wire & Iron Works Louisville, Ky.
 Dufur & Co., Baltimore, Md.
 Dufur, Baggot & Co., Baltimore, Md.
 Meyers Mfg. Co., The Fred J., Hamilton, O.
 Ohio Elevator & Machine Co., The, Columbus, O.
 Otis Elevator Co., New York, N. Y.

Elevator Ropes. [See Wire Ropes]**Elevator Safety Gates.**

American Elec. Mch. & Elevator Co., St. Louis, Mo.
 Richmond Safety Gate Co., Richmond, Ind.

Emery Wheels. [See Grinding Wheels.]**Employment Bureau.**

Diamond Labor Agency, Chicago, Ill.

Engineers.**APPRAISAL.**

Atlantic Engineering Co., Savannah, Ga.
 Day & Zimmerman, Philadelphia, Pa.
 Farree Co., The H. G., Memphis, Tenn.

BLAST FURNACES.

Smythe Co., The S. R., Pittsburgh, Pa.

BRIDGE.

Atlantic Engineering Co., Savannah, Ga.
 Greiner & Whitman, Baltimore, Md.

CHEMICAL.

Crosby, Walter W., Baltimore, Md.
 Institute of Industrial Research, Washington, D. C.
 Little, Inc., A. D., Boston, Mass.
 Pittsburgh Testing Laboratory, Pittsburgh, Pa.

CIVIL.

Arnold Co., The, Chicago, Ill.
 Blair & Drane, Charlotte, N. C.
 Brown & Clarkson, Washington, D. C.
 Bryant, Glauco A., Wilson, N. C.
 Farree Co., H. G., Memphis, Tenn.
 Hogue Engineering Ass'n., Charleston, W. Va.
 Knowles, Morris, Pittsburgh, Pa.
 Mole, H. E., New York, N. Y.
 Potter, Alexander, New York, N. Y.
 Renshaw & Breese, Huntington, W. Va.
 Rucker, B. Parks, Charlotte, N. C.
 Shand Engineering Co., Columbia, S. C.
 Stevens, Harry, Washington, D. C.
 Thompson & Moseley, Greensboro, N. C.
 Waldo, W., Houston, Tex.
 Walker Engineering Corp., Tampa, Fla.
 White Companies, J. G., New York, N. Y.

DAMS.

Quick, Alfred M., Baltimore, Md.
 Reaugh Co., C. W., Charlotte, N. C.
 Spiker, William O., Atlanta, Ga.
 White Companies, J. G., New York, N. Y.

DOCKS.

Greiner & Whitman, Baltimore, Md.

DRAINAGE AND IRRIGATION.

Atlantic Engineering Co., Savannah, Ga.
 Brown & Clarkson, Washington, D. C.
 Bryant, Glauco A., Wilson, N. C.
 Dabney Engineering Co., Memphis, Tenn.
 Ford, Bacon & Davis, New York, N. Y.
 Knowles, Morris, Pittsburgh, Pa.
 McCrady Bros. & Cheves, Inc., Charleston, S. C.
 Perkins, Edmund T., Engineering Co., Chicago, Ill.
 Thompson & Moseley, Greensboro, N. C.
 Walker Engineering Corp., Tampa, Fla.

EFFICIENCY.

Crosby, Walter W., Baltimore, Md.
 Institute of Industrial Research, Washington, D. C.
 Little, Inc., A. D., Boston, Mass.
 Quick, Alfred M., Baltimore, Md.

ELECTRICAL.

Arnold Co., The, Chicago, Ill.
 Crocker-Wheeler Co., Amper, N. J.
 Hogue Engineering Ass'n., Charleston, W. Va.
 Keith, F. O., Baltimore, Md.
 Levy-Morton Co., Columbus, Ga.
 Lide, Martin J., Birmingham, Ala.
 Mole, H. E., New York, N. Y.
 Rucker, B. Parks, Charlotte, N. C.
 Stone & Webster Engr. Corp., Boston, Mass.
 Tucker & Laxon, Charlotte, N. C.
 White, Gilbert C., Charlotte, N. C.

ELECTRIC LIGHT AND POWER PLANTS.

Dabney Engineering Co., Memphis, Tenn.
 Ford, Bacon & Davis, New York, N. Y.
 Graves Engineering Co., Inc., New York, N. Y.
 Keith, F. O., Baltimore, Md.
 Kelly, Thos. C., Cincinnati, Ohio.
 Levy-Morton Co., Columbus, Ga.
 Scofield Engineering Co., Philadelphia, Pa.
 Stone & Webster Engr. Corp., Boston, Mass.
 White Companies, J. G., New York, N.

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Kent, Inc., Robert Serra, Brooklyn, N. Y.
Kelly, Thos. C., Cincinnati, Ohio.
Lide, Martin G., Birmingham, Ala.
McLundie, A. S., Chattanooga, Tenn.
Stevens, Harry, Washington, D. C.
Tucker & Laxton, Charlotte, N. C.

MINING.

Brown & Clarkson, Washington, D. C.
Grimsley G. P. Martin, New York, N. Y.
Hogue Engineering Ass'n, Charleston, W. Va.
Jones, E. M., Chattanooga, Tenn.
Renshaw & Breece, Huntington, W. Va.

MUNICIPAL.

Anderson & Christie, Charlotte, N. C.
Blair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Crosby, Walter W., Baltimore, Md.
Eliot, Henry E., Dallas, Texas.
Graves Engineering Co., Inc., New York, N. Y.
Greiner & Whitman, Baltimore, Md.
Hogue Engineering Ass'n, Charleston, W. Va.
Knights, Morris, Pittsburgh, Pa.
McCready Bros. & Cheves, Inc., Charleston, S. C.
McCready Co., J. B., Atlanta, Ga.
Pew, Arthur, Atlanta, Ga.
Shand Engineering Co., Columbia, S. C.
Walker Engineering Corp., Tampa, Fla.
White, Gilbert O., Charlotte, N. C.

PAVING AND ROAD.

Anderson & Christie, Charlotte, N. C.
Atlantic Engineering Co., Savannah, Ga.
Blair & Drane, Charlotte, N. C.
Bryant, Glauco A., Wilson, N. C.
Crosby, Walter W., Baltimore, Md.
Eliot, Henry E., Dallas, Texas.
Institute of Industrial Research, Washington, D. C.
McCready Bros. & Cheves, Inc., Charleston, S. C.
Shand Engineering Co., Columbia, S. C.
White, Gilbert O., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES.

Day & Zimmerman, Philadelphia, Pa.
Forbes Co., The H. G., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Gilman, Harry L., Boston, Mass.
Graves Engineering Co., Inc., New York, N. Y.
Scodell Engineering Co., Philadelphia, Pa.
Stone & Webster Eng. Corp., Boston, Mass.
White Companies, J. G., New York, N. Y.

REINFORCED CONCRETE. (Bridges, Buildings, etc.)

Cunningham Construction Co., Shreveport, La.
Foster-Creighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Interstate Const. Co., Louisville, Ky.
Lutes, Daniel H., Indianapolis, Ind.
Potter, Alexander, New York, N. Y.
Requarth Co., O. W., Charlotte, N. C.
Savannah Eng. & Construction Co., Savannah, Ga.
Spiker, William O., Atlanta, Ga.
Tucker & Laxton, Charlotte, N. C.
White Companies, J. G., New York, N. Y.

RIVER AND HARBOR.

Gilman, Harry L., Boston, Mass.

SEWERAGE AND WATER-WORKS.

Anderson & Christie, Charlotte, N. C.
Baylin, John R., Birmingham, Ala.
Blair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Bryant, Glauco A., Wilson, N. C.
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
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Knowles, Morris, Pittsburgh, Pa.
Mayer, J. H., Birmingham, Ala.
Miller, Hiram Allen, Boston, Mass.
Myers, E. W., Greensboro, N. C.
Pew, Arthur, Atlanta, Ga.
Potter, Alexander, New York, N. Y.
Quick, Alfred M., Baltimore, Md.
Stevens, Harry, Washington, D. C.
Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.
White, Gilbert O., Charlotte, N. C.

STEEL WORK AND ROLLING MILLS.

Smythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL.

Foster-Creighton-Gould Co., Nashville, Tenn.
Shesser, O. F., Memphis, Tenn.
Spiker, Wm. C., Atlanta, Ga.
Renshaw & Breece, Huntington, W. Va.

THEATRE CONSTRUCTION.

Gallin, W. R., Hopkinsville, Ky.

Engines.

COMPRESSED AIR.

Duke Engine Co., Grand Haven, Mich.

GAS AND GASOLINE.

Affiliated Manufacturers Co., Milwaukee, Wis.
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Cooper Co., O. & G., Mt. Vernon, Ohio.
Gibbs Machinery Co., Inc., Columbus, S. O.
Heer Engine Co., Portsmouth, Ohio.
Mesa, A., New York, N. Y.
Southern Engine & Boiler Works, Jackson, Tenn.
Van Duzen, Roy O., The, Columbus, O.
Westinghouse Machine Co., The, Pittsburgh, Pa.

OIL.

Bolinders Co., New York, N. Y.

Chicago Pneumatic Tool Co., Chicago, Ill.

Heer Engine Co., Portsmouth, Ohio.

Mesa, A., New York, N. Y.

Snow Steam Pump Works, The, New York, N. Y.

STEAM.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

American Hoist & Derrick Co., St. Paul, Minn.

Ball Engine Co., Erie, Pa.

Buffalo Forge Co., Buffalo, N. Y.

Cameron & Barkley Co., Charleston, S. C.

Cooper Co., O. & G., Mt. Vernon, O.

Duke Engine Co., Grand Haven, Mich.

Engberg Electric & Mechanical Works, St. Joseph, Mo.

Gibbs Machinery Co., Inc., Columbus, S. O.

Griffith & Wedge Co., The, Zanesville, O.

Harris Bros. Co., Chicago, Ill.

Houston, Stanswood & Gamble Co., Cincinnati, O.

Jeffrey-Griner Machinery Co., Philadelphia, Pa.

Lefell & Co., Jame, Springfield, O.

Lombard Iron Works, Augusta, Ga.

McKenzie Iron Works, Charlotte, N. C.

Murray Iron Works Co., Burlington, Ia.

Phoenix Iron Works Co., Mendville, Pa.

Phoenix Iron Works, Macon, Ga.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Vitler Mfg. Co., Milwaukee, Wis.

Westinghouse Machine Co., Pittsburgh, Pa.

Envelopes.

Young & Selden Co., Baltimore, Md.

Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.

American Steel Dredge Co., Fort Wayne, Ind.

Bay City Dredge Works, Bay City, Mich.

Byers Mach. Co., The John F., Ravenna, O.

Fairbanks Steam Shovel Co., Marion, O.

Gade Excavating Co., Iowa Falls, Iowa.

Hayward Co., New York, N. Y.

Jeffrey Mfg. Co., Columbus, O.

Kerstons Drill & Equipment Co., Beaver Falls, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Marion steam shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Morris Machine Works, Baldwinville, N. Y.
National Hoisting Engine Co., Harrison, N. J.
The Automatic Shovel Co., Lorain, Ohio.
Williams Co., The G. H., Cleveland, O.

Excavators. (Trench.)

Bay City Dredge Works, Bay City, Mich.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., Iowa Falls, Iowa.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

Exhaust Heads.

American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)
Builders' Exchange, Baltimore, Md.

Expansion Joints.

Radger & Sons Co., E. B., Boston, Mass.

Expansion Joints. (Street and Road.)
Phillip Carey Co., The, Cincinnati, Ohio.

Expanded Metal. [See Lath.]

Explosives.

Du Pont De Nemours Powder Co., E. I., Wilmington, Del.

Keystone Nat'l. Powder Co., Emporium, Pa.

Export Agents. (South America.)
Lutz, Friedr. W., Richmond, Va.

Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

Fans. (Electric.)

General Electric Co., Schenectady, N. Y.

Robbins & Myers Co., Springfield, O.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

Fastener Driving Machine. (Corrugated Joint.)
Saranac Machine Co., Benton Harbor, Mich.

Feed-Water Heaters and Purifiers.

American Water Softener Co., Philadelphia, Pa.

Blake & Knowles Steam Pump Works, East Cambridge, Mass.

Murray Iron Works Co., Burlington, Ia.

National Pipe Bending Co., New Haven, Conn.

Scaff & Sons Co., Wm. B., Pittsburgh, Pa.

Stewart Heater Co., Buffalo, N. Y.

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Stewart Heater Co., Buffalo, N. Y.

Felt. (Building, Sheathing.)
Harrett Mfg. Co., Philadelphia, Pa.

Fencing. (Woven Wire Field.)
American Steel & Wire Co., Chicago, Ill.

Cyclone Fence Co., Waukegan, Ill.

Gulf States Steel Co., Birmingham, Ala.

Fencing, Entrance Gates. (Iron, Steel, Wire.)
American Steel & Wire Co., Chicago, Ill.

Hotels Iron & Wire Co., J. K., Detroit, Mich.

Cyclone Fence Co., Waukegan, Ill.

Duff & Co., Baltimore, Md.

New Jersey Wire Cloth Co., Trenton, N. J.

Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Machy.]
Stedman's Foundry & Machine Works, Aurora, Ind.

Valk & Murdoch Iron Works, Charleston, S. C.

Fibre. (Vulcanized.)

Continental Fibre Co., Newark, Del.

Files.

Harrett Co., G. & H., Philadelphia, Pa.

Nicholson File Co., Providence, R. I.

Filters. (Water, for Domestic and Industrial Purposes.)
American Water Softener Co., Philadelphia, Pa.

International Filter Co., Chicago, Ill.

New York Con. Jewell Fil. Co., New York, N. Y.

Fire Clay. [See Brick, Fire.]

Fire Door Fixtures.
Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers.

Radger & Sons Co., E. B., Boston, Mass.

Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

Fire Places. (Brick and Tile.)
Hood Brick Co., B. Mifflin, Atlanta, Ga.

Fireproof Building Construction. [See Concrete Construction.]

Fireproof Building Material.
Hannon Pipe Co., P., Louisville, Ky.

John-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters.
Kinnear Mfg. Co., Columbus, O.

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Wagner's Sons Co., J. E., Louisville, Ky.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings. (Wire Rope.)
Waterbury Co., New York, N. Y.

Fireproofing. (Brick and Tile.)
Hood Brick Co., B. Mifflin, Atlanta, Ga.

Fixtures. (Electric Lighting.)
Hill & Co., Walter E., Baltimore, Md.

Flanges. (Iron and Steel.)
American Cast Iron Pipe Co., Birmingham, Ala.

American Pipe & Construction Co., Phila., Pa.

American Spiral Pipe Works, Chicago, Ill.

Dart Mfg. Co., E. M., Providence, R. I.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.

National Tube Co., Pittsburgh, Pa.

U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.

Wood & Co., R. D., Philadelphia, Pa.

Flare Lamps.

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

Flexible Joints.
Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

Flooring. (Oreosoted Block.)
Republic Oreosoting Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)
Whiting, William S., Asheville, N. C.

Flour and Grist Mill Machinery and Supplies.
Caldwell & Sons Co., H. W., Chicago, Ill.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Flue Lining.

Owensboro Sewer Pipe Co., Owensboro, Ky.

Southern Sewer Pipe Co., Birmingham, Ala.

Forges.

Buffalo Forge Co., Buffalo, N. Y.

Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

Foundations. (Waterproof.)
Requarth Co., O. W., Charlotte, N. C.

Foundry Equipment and Supplies.
Newport Sand Bank Co., Inc., Newport, Ky.

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Foundry Facings. (Talc and Soapstone.)
Georgia Talc Co., Asheville, N. C.

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Glamorgan Pipe & Foundry Co., Lynchburg, Va.

Golden Foundry & Machine Wks., Columbus, Ga.

Grainger & Co., Louisville, Ky.

Lombard Iron Works, Augusta, Ga.

Titus, E. E., Petersburg, Va.

Valk & Murdoch Iron Works, Charleston, S. C.

Frogs. [See Railroad Frogs and Switches.]

Fuel Economizer.

Green Fuel Economizer Co., Mattewan, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil.

Gulf Refining Co., Pittsburgh, Pa.

U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)
Smythe Co., The S. R., Pittsburgh, Pa.

Fuses. (Electrical.)
Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells. (Renewable.)
Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings.
John-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

La Belle Iron Works, Steubenville, O.

McCalla, Inc., Harold, Philadelphia, Pa.

Portsmouth Steel Co., Portsmouth, O.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Youngstown Sheet & Tube Co., Youngstown, O.

Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Steel Products Co., The, Savannah, Ga.

Garbage Disposal Plants.
Stacy-Bates Co., Minneapolis, Minn.

Gas Blowers. (Turbine.)
Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. [See Engines, Gas.]

Gas Machines.

Kemp Mfg. Co., O. M., Baltimore, Md.

Milburn Co., Alex. R., Baltimore, Md.

Gas Plants.

Power & Mining Machinery Co., Oudaby, Wis.

Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers.

Smythe Co., The S. R., Pittsburgh, Pa.

Westinghouse Machine Co., Pittsburgh, Pa.

Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene.

Gulf Refining Co., Pittsburgh, Pa.

Gas and Steam Fitters' Tools.
Saunders' Sons, D., Yonkers, N. Y.

Gears.

Caldwell & Sons Co., H. W., Chicago, Ill.

Cresson-Morris Co., Philadelphia, Pa.

James Mfg. Co., D. O., Chicago, Ill.

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Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mo.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Triumph Electric Co., Cincinnati, O.

Geologists.

Davis, Geo. C., Phila., Pa.

Frøthing & Robertson, Richmond, Va.

Grimsley, G. F., Martinsburg, W. Va.

Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nicetown (Philadelphia), Pa.

Granite.

Southern Marble & Granite Co., Spartanburg, S. C.

Graphite.

Insulated Wires and Cables.
Safety Insulated Wire & Cable Co., New York, N. Y.

Insulating Materials.
Continental Fibre Co., Newark, Del.
General Electric Co., Schenectady, N. Y.
John-Manville Co., H. W., New York, N. Y.

Insurance.
Hartford Steam Boiler Inspector & Insurance Co., Hartford, Conn.

Iron.
Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Iron Works Co., Heaver Falls, Pa.
Wood Iron & Steel Co., Allentown, Pa.

Irrigation Machinery.
Cameron Steam Pump Wks., A. S. New York, N. Y.

Investment Securities.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.

Kettles. (Steam Jacket.)
Badger & Sons Co., E. R., Boston, Mass.

Key Seater. (Portable.)
Harr & Son, John T., Brooklyn, N. Y.

Labor Agency.
Diamond Labor Agency, Chicago, Ill.

Lace Leather.
Graton & Knight Mfg. Co., Worcester, Mass.

Lamps. (Arc and Incandescent.)
Boston-Economy Lamp Division, Danvers, Mass.
General Electric Co., Schenectady, N. Y.
Lee Electric Co., New York, N. Y.
Piedmont Electric Co., Asheville, N. C.

Lamps. (Carbon and Tungsten.)
Newman Electric Lamp Co., Cincinnati, O.

Lamp Posts. (Electric, Gas.)
Western Gas Construction Co., Ft. Wayne, Ind.

Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]

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Lathe Attachment. (Combination)
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Lathes. (Engine.)
Greaves, Kinsman Tool Co., The Cincinnati, O.

Lawn Furniture. (Wire.)
Hollis Iron & Wire Works, J. E., Detroit, Mich.

Ledite.
Ladice Co., Inc., The Philadelphia, Pa.

Lights. (Portable Acetylene.)
Milburn Co., Alex. N., Baltimore, Md.

Liquor Filters.
International Filter Co., Chicago, Ill.

Lithographers, Engravers.
Young & Selden Co., Baltimore, Md.

Lockers (Steel)
Bernstein Mfg. Co., Phila., Pa.
Kelley Metal Coiling Mfg. Co., S., Pittsburgh, Pa.
Merritt & Co., Camden, N. J.
Van Hurling, J. M., Atlanta, Ga.

Locomotives.

INDUSTRIAL.
Baldwin Locomotive Wks., The Philadelphia, Pa.
Olinax Mfg. Co., Corry, Pa.
Oard, Geo. B., Cincinnati, O.
Davenport Locomotive Works, Davenport, Ia.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.

RAILWAY.
Baldwin Locomotive Wks., The Philadelphia, Pa.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.

Looms and Weaving Machinery.
Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.
Saco-Lowell Shops, Boston, Mass.

Loom Harness.
American Supply Co., Providence, R. I.

Lubricants.
Albany Lubricating Co., New York, N. Y.
Otis Elevator Co., New York, N. Y.

Lubricants. (Graphite.)
Oxon Crucible Co., Joseph, Jersey City, N. J.

Lumber.
Industrial Lumber Co., Elizabeth, La.
Lumber. (Creosoted.)
American Creosote Works, New Orleans, La.

Lumber. (Heavy Construction, Pitch Pine, etc.)
Industrial Lumber Co., Elizabeth, La.
National Lumber & Creosote Co., Texarkana, Ark.

Lumber Buggies.
Sole Steam Feed Works - Meridian, Miss.

Lumber Stackers.
Sole Steam Feed Works, Meridian, Miss.

Machinery. (Special.)
Bliss Co., E. W., Brooklyn, N. Y.
Kline, Lewis T., Alpena, Mich.
Universal Machine Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)
Assets Purchasing Co., Wheeling, W. Va.
Bailey & James Boiler & Mch. Co., Joplin, Mo.
Boston Iron & Metal Co., Balto., Md.
Cleveland Bolting & Machinery Co., Cleveland, O.
Dunlop & Son, New York, N. Y.
Harris Bros. Co., Chicago, Ill.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Jeffrey-Griner Machinery Co., Philadelphia, Pa.
Lehman, Charles T., Birmingham, Ala.
Lodge & Shipley Mach. Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.

New River Co., Macdonald, W. Va.
Newman & Co., V. M., Fort Wayne, Ind.
Pittsburgh Engineering Co., Chicago, Ill.
Power Equipment Co., New York, N. Y.
Prentiss Tool & Supply Co., New York, N. Y.
Randle Machinery Co., Cincinnati, O.
Read Co., Howard W., Philadelphia, Pa.
Sachse & Co., George, Philadelphia, Pa.
Samuel, Frank, Philadelphia, Pa.
Seyfert's Sons, Inc., L. E., Philadelphia, Pa.
Southern Mchry. Exchange, Jacksonville, Fla.
South Side Fdry. & Mch. Co., Charleston, W. Va.
Stearns, John C., Kansas City, Mo.
Stewart, Paul, Cincinnati, O.
Tampa Machinery Exchange, Tampa, Fla.
Toomey, Frank, Inc., Philadelphia, Pa.
Wilson Machy. Co., Harold, R., St. Louis, Mo.
Winterer Co., Herman L., Philadelphia, Pa.

Machine Tools.
Garrett Attachment Co., Nashville, Tenn.
Greaves, Kinsman Tool Co., The Cincinnati, O.

Machinists. (Engineers.)
Universal Machine Co., Baltimore, Md.

Magnesia Materials.
John-Manville Co., H. W., New York, N. Y.

Magnetic Separators.
Buchanan & Co., Inc. C. G., New York, N. Y.
Paxon Co., J. W., Philadelphia, Pa.

Mail Chutes.
Cutler Mail Chute Co., Rochester, N. Y.

Mechanical Draft.
Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Metal Ceilings. [See Ceilings, Metal.]

Metaline.
Metalline Co., Long Island City, N. Y.

Metal. (For Tanks, Culverts, Roofing, etc.)
Portsmouth Steel Co., Portsmouth, O.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Metal Shingles. [See Shingles.] (Metal.)

Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)

Metal Work. [See Sheet Metal Work.]

Metal-Working Machinery. (Sheet.)
Bliss Co., E. W., Brooklyn, N. Y.

Meters. (Water.)
Alberger Pump & Condenser Co., New York, N. Y.

Meter Boxes, Couplings, Gauges. (Water.)
Clark Co., H. W., Mattison, Ill.

Micrometers, Calipers, etc.
Starratt Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)
International Filter Co., Chicago, Ill.

Mill Engineers and Architects.
O'Brian, W. O., Memphis, Tenn.
Sillins, J. E., Greenville, S. C.

Mill Supplies.
Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Lombard Iron Works, Augusta, Ga.
Lunkenheimer Co., The Cincinnati, O.
Mecklenburg Iron Works, Charlotte, N. C.
Salem Foundry & Machine Wks., Salem, Va.
Starr Co., R. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Mining Machinery. (Gold, Copper, Plate, etc.)
Bartlett & Snow Co., C. O., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Mixers. (Concrete.)
Standard Scale & Supply Co., Pittsburgh, Pa.
Van Duzen, Royce Co., The Columbus, O.

Mixing Machinery.
Dunlap, W. D., Syracuse, N. Y.

Mortar Colors.
Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks. (Gasoline.)
White Co., The Cleveland, O.

Motor Trucks. (Second Hand.)
Mar-Dei Mob. Co., Baltimore, Md.

Municipal Castings.
Clarksville Fdry. & Mach. Works., Clarksville, Tenn.

Music Wire.
American Steel & Wire Co., Chicago, Ill.
Waterbury Co., The New York, N. Y.

Nails. (Oak.)
La Belle Iron Works, Steubenville, O.

Nails and Spikes.
La Belle Iron Works, Steubenville, Ohio.
Republic Iron & Steel Co., Youngstown, O.
Youngtown Sheet & Tube Co., Youngstown, O.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Office Furniture (Steel)
Merritt & Co., Camden, N. J.

Oil. (Creosote.)
Barrett Mfg. Co., Philadelphia, Pa.

Oil. (Lubricating, Etc.)
Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. O., Baltimore, Md.

Oil Cans.
Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]

Oil Separators.
Stewart Heater Co., Buffalo, N. Y.

Oil Well Machinery.
Keystone Steam Well Mach. Co., Heaver Falls, Pa.
Williams Bros., Hibaca, N. Y.

Oil Well Tubing and Casing.
Ryers Co., A. M., Pittsburgh, Pa.

Ore Handling Machinery. [See Coal Handling Machinery.]

Ornamental Iron Works.
Bollee Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Ohio Elevator & Mach. Co., The Columbus, O.
Scriber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.

Oxygen.
International Oxygen Co., New York, N. Y.

Oxygen Generators.
International Oxygen Co., New York, N. Y.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.
International Oxygen Co., New York, N. Y.
Milburn Co., Alex. N., Baltimore, Md.

Packing. (Asbestos, Metallic, Rubber, Leather, etc.)
Graton & Knight Mfg. Co., Worcester, Mass.
Jenkins Bros., New York, N. Y.
John-Manville Co., H. W., New York, N. Y.
Power Specialty Co., New York, N. Y.
United Lead Co., New York, N. Y.

Packing. (Lead Wool.)
United Lead Co., New York, N. Y.

Paint. (Cement Floors, Masonry, Stucco, etc.)
Cheesman & Elliott, New York, N. Y.

Paint. (Metal Surfaces.)
Cheesman & Elliott, New York, N. Y.
Dixon Crucible Co., Joseph, Jersey City, N. J.

Paint. (Roofing, Building, etc.)
Cameron & Barkley Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Cheesman & Elliott, New York, N. Y.

Paper. (Roofing, Building, Shading, etc.)
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.

Partitions. (Wooden Rolling.)
Van Hurling, J. M., Atlanta, Ga.

Patents and Inventions.
Russell Machine Co., F. E., Dallas, Tex.

Patent Attorneys.
Brown, Eugene O., Washington, D. C.
Chandless & Chandless, Washington, D. C.
Coleman, Watson E., Washington, D. C.
Duffie & Co., John S., Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Fitzgerald & Co., W. T., Washington, D. C.
Hodges, Vernon E., Washington, D. C.
Jenner, Herbert, Washington, D. C.
Lacey, R. S. & A. H., Washington, D. C.
McLundie, A. S., Chattanooga, Tenn.
Parker, C. L., Washington, D. C.

Paving Filter.
Barrett Mfg. Co., Philadelphia, Pa.

Paving Blocks. (Creosoted.)
International Creosoting & Construction Co., Galveston, Tex.

Paving Blocks. (Granite.)
Southern Marble & Granite Co., The Spartanburg, S. C.

Paving Brick.
Adamantine Clay Products Co., North Mountain, W. Va.
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.
Dunn Wire-Cut-Lug Brick Co., Conneaut, Ohio.
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.

Perforated Metal.
Caldwell & Son, H. W., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendricks Mfg. Co., The Carbonate, Pa.
Manhattan Perforated Metal Co., New York, N. Y.
Mandi & Sons, Charles, Jersey City, N. J.

Petroleum Refiners.
Gulf Refining Co., Inc., New York, N. J.
Standard Oil Co., Inc., Newark, N. J.

Phosphate Machinery.
Aising Engineering Co., J. R., New York, N. Y.
American Process Co., New York, N. Y.
Bailey-Lobby Co., The Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Link Belt Co., Nicetown (Philadelphia), Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Impact Pulv. Co., Chicago, Ill.
Valz & Murdoch Iron Works, Charleston, S. C.

Pig Iron.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.

Pile Drivers.
Volcan Iron Works, Chicago, Ill.

Pile Driving and Wharf Building.
Murray & Co., Inc., W. D., Norfolk, Va.

Piling. (Creosoted.)
American Creosote Works, New Orleans, La.
Intern'l Creosoting & Const. Co., Galveston, Tex.
Southern Creosoting Co., Ltd., Silldell, La.

Pillow Blocks.
Jolden's Foundry & Machine Co., Columbus, Ga.

Pipe. (Cast Iron.)
Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, Ohio.
National Tube Co., Pittsburgh, Pa.
Youngtown Sheet & Tube Co., Youngstown, O.

Pipe. (Cast Iron.)
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
Ulow & Sons, James H., Chicago, Ill.
Donaldson Iron Co., Emmaus, Pa.
Giamorgan Pipe & Foundry Co., Lynchburg, Va.
Greenspan's Sons Iron & Steel Co., Jos., St. Louis, Mo.
Lynchburg Foundry Co., Lynchburg, Va.
Mason Iron & Steel Co., Massillon, O.
Standard Cast Iron Pipe & Fdry. Co., Bristol, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Huntington, N. J.
Warren Fdry. & Mach. Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.

Pipe. (Coil.)
Frick Co., The Waynesboro, Pa.
National Pipe Foundry Co., New Haven, Conn.
York Mfg. Co., York, Pa.

Pipe. (Corrugated Culvert.) [See Culvert (Corrugated Metal).]

Pipe (Lead)
United Lead Co., New York, N. Y.

Pipes. (Riveted.)
Keeler Co., E., Williamsport, Pa.

Pipes. (Second Hand.)
Eagle Pipe Supply Co., New York, N. Y.
Marine Metal & Supply Co., New York, N. Y.

Pipes. (Spiral Riveted.)
American Spiral Pipe Works, Chicago, Ill.

Pipes. (Spiral Steel.)
Standard Spiral Pipe Works, Chicago, Ill.

Pipes. (Sewer, Vitrified.) [See Sewer Pipe, Vitrified.]

Pipes. (Wood.)
Wyckoff & Son Co., A., Elmira, N. Y.

Pipes. (Wrought Iron.)
Byers Co., A. M., Pittsburgh, Pa.
Youngtown Sheet & Tube Co., Youngstown, O.

Pipe Bends.
Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.

Pipe Covering. (Steam.)
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
Wyckoff & Son Co., A., Elmira, N. Y.

Pipe Cutting and Threading Machinery.
Saunders' Sons, D., Yonkers, N. Y.

Pipe Fittings.
American Cast Iron Pipe Co., Birmingham, Ala.
Lunkenheimer Co., The Cincinnati, O.
Pittsburgh Valve, Fdry. and Const. Co., Pittsburgh, Pa.

Warren Fdry. & Mach. Co., New York, N. Y.
York Mfg. Co., York, Pa.

Pipe Jointing. (Gas and Water Main.)
Leadbite Co., Inc., The Philadelphia, Pa.
United Lead Co., New York, N. Y.

Pipe Unions and Joints.
Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburgh, Pa.

Pipe Wrenches and Cutters.
Saunders' Sons, D., Yonkers, N. Y.

Piping System. (Designed and Installed.)
Pittsburgh Valve, Foundry & Construction Co., Pittsburgh, Pa.

Pitch.
Barrett Mfg. Co., Philadelphia, Pa.

Plaster Machinery.
Bartlett & Snow Co., C. O., Cleveland, O.

Plates.
Allegheny Steel Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
Wood Iron & Steel Co., Allentown, Pa.

Pneumatic Tools. [See Tools—Pneumatic.]

Poles. (Creosoted.)
American Creosote Works, New Orleans, La.
Intern'l Creosoting & Const. Co., Galveston, Tex.
National Lumber & Creos. Co., Texarkana, Ark.
Southern Creosoting Co., Ltd., Silldell, La.
Southern Wood Preserving Co., Atlanta, Ga.

Polishing Machinery. (Wheels and Blocks.)
Carborandum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Power Plants. (Steam and Electric.)
Allen-Scales Engineering Co., Nashville, Tenn.
Assets Purchasing Co., Wheeling, W. Va.
Gibbs Machinery Co., Inc., Columbia, S. C.

Power Transmission Machinery.
Bailey-Lobby Co., Charleston, S. C.
Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Schofield Iron Works, Macon, Ga.
Smith-Courtney Co., Richmond, Va.
Wolf Co., The Chambersburg, Pa.
Wood's Sons, T. B., Chambersburg, Pa.

Presses. (Rolling, Cottonseed Oil, etc., Hydraulic and Power.)
Boomer & Boschert Press Co., Syracuse, N. Y.
Cardwell Machine Co., Richmond, Va.
Continental Gin Co., Birmingham, Ala.
French Oil Mill Mchry. Co., The Piquette, Ohio.
Murray Co., The Atlanta, Ga.
Saco-Lowell Shops, Boston, Mass.

Presses. (Stamping.)
Bliss Co., E. W., Brooklyn, N. Y.

Printers. (Book, Catalog, Job, etc.)
First-McGinley Co., Baltimore, Md.

Promoters.
Electric Bond & Share Co., New York

Pulleys. (Friction Clutch.)
Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., The Philadelphia, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulleys. (Steel Rim.)
Medart Patent Pulley Co., St. Louis, Mo.

Pulleys. (Wood Split.)
Caldwell & Son Co., H. W., Chicago, Ill.
Lane Mfg. Co., Montpelier, Vt.
Medart Patent Pulley Co., St. Louis, Mo.
Revere Pulley Co., Columbus, Ind.
Saginaw Mfg. Co., Saginaw, Mich.
Salem Foundry & Machine Wks., Salem, Va.

Pulleys, Shafting and Hangers.
Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Mach. Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulverizers.

Aising Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Grunders Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Siedman's Foundry Machine Wks., Aurora, Ind.
Western Wheeled Scraper Co., Aurora, Ill.

Pumping Machinery.

Affiliated Manufacturers Co., Milwaukee, Wis.
Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook, A. D., Lawrenceburg, Ind.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Erie Pump & Equipment Co., Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Holland Machine Co., New York, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Air.)

Blakelee Mfg. Co., Du Quoin, Ill.

Pumps. (Boiler Feed.)

Alberger Pump & Condenser Co., New York, N. Y.
Blakelee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Jeauville Iron Works Co., Hazleton, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.

Pumps. (Centrifugal.)

Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Erie Pump & Equipment Co., Erie, Pa.
Holland Machine Co., New York, N. Y.
Jeauville Iron Works Co., Hazleton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Pacific Flush Tank Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Deep Well.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Holland Machine Co., New York, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.

Pumps. (Dredging.)

Buffalo Steam Pump Works, Buffalo, N. Y.
Dean Bros. Steam Pump Works, Indianapolis, Ind.
Erie Pump & Equipment Co., Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Holland Mch. Co., New York, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Wood & Co., R. D., Phila., Pa.

Pumps. (Hydraulic.)

Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Oardwell Machine Co., Richmond, Va.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Erie Pump & Equipment Co., Erie, Pa.
French Oil Mill Mch. Co., The Piqua, O.
Holland Mch. Co., New York, N. Y.

Pumps. (Oil and Gasoline.)

Keystone Boiler & Fdry. Co., Columbia, Pa.

Pumps. (Steam.)

Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Blakelee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Oxley Air Compressor Works, Cambridge, Mass.
Cook, A. D., Lawrenceburg, Ind.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works Co., Burlington, Ia.
Scranton Pump Co., Scranton, Pa.
Snow Steam Pump Works, The New York, N. Y.
Worthington, Henry R., Harrison, N. J.

Pumps. (Trench.)

Affiliated Manufacturers Co., Milwaukee, Wis.

Pumps. (Turbine Driven.)

Sturtevant Co., R. F., Hyde Park, Boston, Mass.

Pumps. (Vacuum.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.

Pumps. (Water Works.)

Goulds Mfg. Co., Seneca Falls, N. Y.

Pump Leathers.

Graton & Knight Mfg. Co., Worcester, Mass.

Punching and Shearing Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Purchasing Agents.

U. S. Purchasing Corporation, New York, N. Y.

Racks (For Pattern Storage.)

Merritt & Co., Camden, N. J.

Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**Railroad Equipment and Supplies. (New and Second-hand.)**

American Frog & Switch Co., Hamilton, O.
Bailey-Lebby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Cincinnati Frog & Switch Co., Cincinnati, O.
Cord, Geo. B., Cincinnati, O.
Fairbanks-Morse & Co., Atlanta, Ga.
Foster Co., L. B., Pittsburgh, Pa.
Georgie Car & Locomotive Co., Atlanta, Ga.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Macleary, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Read Co., Howard W., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Thaw & Williams, Cincinnati, Ohio.
United States Rail Co., Cumberland, Md.
Weir Frog Co., Cincinnati, O.
Wilson & Co., E. H., Philadelphia, Pa.
Wilson Mach. Co., Harold R., St. Louis, Mo.
Zelnicer Supply Co., Walter A., St. Louis, Mo.

Railroad Frogs & Switches.

American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Conley Frog & Switch Co., Memphis, Tenn.
Kilby Frog & Switch Co., Birmingham, Ala.

Newhall Engineering Co., Geo. M., Philadelphia, Pa.

Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.

Rails. (Steel.)

Foster Co., L. B., Pittsburgh, Pa.
Frank, J. E., Atlanta, Ga.
Gulf States Steel Co., Birmingham, Ala.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Hyde, Chas., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Levi & Co., Henry, Philadelphia, Pa.
Macleary, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
United States Rail Co., Cumberland, Md.
Wilson & Co., E. H., Philadelphia, Pa.

Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**Railings and Grilles. (Brass.)**

Newman Mfg. Co., Cincinnati, O.

Railways. (Industrial.)

Chase Fdry. & Mfg. Co., Columbus, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Hunt Co., Inc., O. W., West New Brighton, N. Y.
Link-Bell Co., Nicotown (Philadelphia), Pa.

Rams. (Hydraulic.) [See Hydraulic Rams.]**Reamers.**

Morse Twist Drill & Mch. Co., New Bedford, Mass.

Reeds.

American Supply Co., Providence, R. I.

Refrigerating Machinery and Apparatus.

Huetteman & Cramer Co., The, Detroit, Mich.
Remington Machine Co., Wilmington, Del.
Vilter Mfg. Co., Milwaukee, Wis.
Vogt Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.

Reinforcing Bars. [See Concrete Reinforcing Bars.]**Riveters. (Pneumatic.)**

Independent Pneumatic Tool Co., Chicago, Ill.

Road Expansion Joints.

Phillip Carey Co., The, Cincinnati, Ohio.

Road Machinery.

Austin-Western Road Mch. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Holt Manufacturing Co., The, Peoria, Ill.
Kelly Springfield Road Roller Co., Springfield, O.
The Automatic Shovel Co., Lorain, Ohio.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheeled Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Roadmaking Materials.

Barrett Mfg. Co., Philadelphia, Pa.
Rocmac Road Corp. of America, Phila., Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Binders.

Barrett Mfg. Co., Phila., Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co. New York, N. Y.

Road Roller. (Steam.)

Austin-Western Road Mch. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mch. Co., Kingston, N. Y.

Road Oil.

Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co. New York, N. Y.

Road Preservatives.

Barrett Mfg. Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co. New York, N. Y.

Road Scarifiers.

Buffalo Steam Roller Co., Buffalo, N. Y.

Gallon Iron Works & Mfg. Co., The, Gallon, Ohio

Rock Crushers. [See Crushers, Rock.]**Roller Covering Supplies.**

American Supply Co., Providence, R. I.

Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Pittsburgh, Pa.
Asphalt Ready Roofing Co., New York, N. Y.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
John-Manville Co., H. W., New York, N. Y.

Roofing. (Metal Shingles.) [See Shingles, Metal.]

Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.

Roofing. (Slate.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.

Roofing and Siding. (Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Pittsburgh, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Portsmouth Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.

Rope. (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rope. (Wire.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Hunt Co., Inc., O. W., West New Brighton, N. Y.
Waterbury Co., New York, N. Y.

Rope Drives.

Caldwell & Son, H. W., Chicago, Ill.
Green-Morris Co., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rubber Goods.

Eureka Fire Hose Mfg. Co., New York, N. Y.

Rules. (Steel.)

Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Sales and Vaults.

York Safe & Lock Co., York, Pa.

Sand.

Arundel Sand & Gravel Co., Baltimore, Md.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Sand. (Foundry.)

Newport Sand Bank Co., Inc., Newport, Ky.

Sap Stain Preventive.

Church & Dwight Co., New York, N. Y.

Sash Chain.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Saws.

Gerlach Co., Peter, Cleveland, O.
Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.
Smith Machine Co., H. B., Smithville, N. J.

Saws. (Band.)

Smith Machine Co., H. B., Smithville, N. J.

Saws. (Hack.)

Starrett Co., L. S., Athol, Mass.

Sawmill Dogs.

Soule Steam Feed Works, Meridian, Miss.

Sawmills.

Gainesville Iron Works, Gainesville, Ga.
Gibbs Machinery Co., Inc., Columbia, S. C.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.

Sawmill Machinery.

Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Turbine Mfg. Co., Orange, Mass.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Wks., Jackson, Tenn.

Saw Sharpeners.

Carborundum Co., Niagara Falls, N. Y.

Vitified Wheel Co., Westfield, Mass.

Saw Sharpeners and Files. (Cotton Gin.)

Carver Cotton Gin Co., East Bridgewater, Mass.

Sawing Outfits. (Contractors and Industrial.)

Rutland Foundry & Machine Co., Bennington, Vt.

Scales.

Standard Scale & Supply Co., Pittsburgh, Pa.

Screens. (Fly, Window and Door.)

Cincinnati Mfg. Co., Cincinnati, O.

New Jersey Wire Cloth Co., Trenton, N. J.

Screens. (Mining, Stone, etc.)

Converse Co., Inc., F. S., Lestershire, N. Y.
Erdie Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Mound & Sons, Charles, Jersey City, N. J.
New Jersey Wire Cloth Co., Trenton, N. J.

Screenings. (For Concrete and Road Construction.)

American Ballast Co., Knoxville, Tenn.

Screws. (Machine.)

Progressive Mfg. Co., Torrington, Conn.

Screws. (Safety Set.)

Allen Manufacturing Co., Inc., Hartford, Conn.

Screw Machine Products.

Progressive Mfg. Co., Torrington, Conn.

Separators. (Dust.)

Buffalo Forge Co., Buffalo, N. Y.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Sewer Flushing Siphons.

Pacific Flush Tank Co., New York, N. Y.

Sewer Joint Compounds.

Pacific Flush Tank Co., New York, N. Y.

Sewer Pipe. (Vitrified.)

Bannon Pipe Co., F. L., Louisville, Ky.
Blackmer & Post Pipe Co., St. Louis, Mo.
Cannellon Sewer Pipe Co., Cannelton, Ind.
Owensboro Sewer Pipe Co., Owensboro, Ky.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.

Sewer Pipe and Drains. (Monolithic Concrete)

Requarth Co., C. W., Charlotte, N. C.

Sewer Supplies.

Clarksville Fdry. & Mach. Works, Clarksville, Tenn.

Sewage Pumping and Disposal Apparatus.

Pacific Flush Tank Co., New York, N. Y.

Shafting. (Cold Rolled Steel.)

American Steel & Wire Co., Chicago, Ill.

Shafting. (Polished Steel.)

Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Pardee Works Co., Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Union Drawn Steel Co., Beaver Falls, Pa.

Shafting. [See Pulleys, Shafting and Hangers.]**Sharpening Stones.**

Carborundum Co., Niagara Falls, N. Y.
Vitified Wheel Co., Westfield, Mass.

Sheet, Brass and Copper.

McKenna Bros., Brass Co., Pittsburgh, Pa.

Sheet Metal Work.

Atlas Metal Works, Dallas, Tex.
Danner Metal Works, Hagerstown, Md.
Dixie Culvert & Metal Co., Atlanta, Ga.
Lone Star Culvert Co., Houston, Tex.
McMillan Bros., Jacksonville, Fla.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
Salsbury Metal Culvert Co., Salsbury, N. C.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.
Voigtman & Co., Chicago, Ill.

Sheet Metal Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Sheet Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
La Belle Iron Works, Steubenville, O.
Portsmouth Steel Co., Portsmouth, O.
Republic Iron & Steel Co., Youngstown, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Shelving. [(Steel) Vault, Store, Etc.]

Merritt & Co., Camden, N. J.

Van Hurlingen, J. M., Atlanta, Ga.

Shingles. (Metal.)

Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.

Shop Furniture. (Steel.)

Merritt & Co., Camden, N. J.

Shovels. (Special for Any Purpose.)

Connaut Shovel Co., The, Connaut, Ohio.

Shovels. (Steel, Brass, Aluminum, etc.)

Connaut Shovel Co., The, Connaut, Ohio.

Shutters. (Iron.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

Shutters. (Steel Rolling.)

Kinner Mfg. Co., Columbus, O.

Shutters. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Silos. (Metal.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Skylights and Cornices.

Danner Metal Works, Hagerstown, Md.

Steel Buildings. (Designers, Builders.)
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Richmond Structural Steel Co., Richmond, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Sneed Architectural Iron Wks., Louisville, Ky.
Turner, O. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
Gracible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Coatesville Boiler Works, Coatesville, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Memphis Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.

Steel Protector. (Concrete Curb, Steps, etc.)
[See Curb Protector Steel.]

Steel Sheet Piling.
Franks, J. E., Atlanta, Ga.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
Baltimore Office Supply Co., Baltimore, Md.

Stills. (Tarpentine.)
McMillan Bros., Jacksonville, Fla.

Stirrups. (Building.)
Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
Baltimore Office Supply Co., Baltimore, Md.

Stock Room Racks, Bins, Etc.
Merritt & Co., Camden, N. J.

Stokers. (Hand.)
Huber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
Babcock & Wilcox Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Stone. (Building.)
Atlantic Stone Co., Atlanta, Ga.
Bedford Steam Stone Works, Bedford, Ind.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Stone. (Crushed.) [See Crushed Stone.]

Stone and Gravel Plants.
Weller Mfg. Co., Chicago, Ill.

Storage Batteries.
Elec. Storage Battery Co., The, Philadelphia, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.

Strapping Leather.
raion & Knight Mfg. Co., Worcester, Mass.

Structural Steel and Iron.
Allegheny Steel Co., Pittsburgh, Pa.
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bourne-Fuller Co., The, Cleveland, Ohio
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Works, Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Detroit Bros., Baltimore, Md.
East St. Louis Bridge Co., East St. Louis, Ill.
Grainger & Co., Louisville, Ky.
Greenspan's Sons Iron & Steel Co., Jos., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Oregon Bridge Co., Lebanon, Ohio.
Memphis Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Richmond Structural Steel Co., Richmond, Va.
Scalf & Sons Co., Wm. B., Pittsburgh, Pa.
Schreiber & Sons Co., The L., Cincinnati, O.
Sneed Architectural Iron Works, Louisville, Ky.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Stump Pullers.
Zimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
Babcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.

Surveying Instruments.
Weber & Co., F., Philadelphia, Pa.

Swinging Engines.
Dake Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
General Electric Co., Schenectady, N. Y.

Switches. [See Railroad Frogs and Switches.]

Switchstands.
Weir Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
Georgia Talc Co., Ashville, N. C.

Tanks. (Iron and Steel.)
American Bridge Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Coatesville Boiler Works, Coatesville, Pa.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dixie Culvert & Metal Co., Atlanta, Ga.
Harry Bros. Co., New Orleans, La.
Hartley Boiler Works, Montgomery, Ala.
Hendricks Mfg. Co., Carbondale, Pa.
Kessler Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Memphis Steel Construction Co., Memphis, Tenn.
New York Central Iron Wks. Co., Hagerstown, Md.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield Iron Works, Macon, Ga.
Struthers-Wells Co., Warren, Pa.
Tennessee Metal Culvert Co., Nashville, Tenn.
Twin City Boiler Works, Bristol, Va.-Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.

Tapes. (Measuring.)
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.

Telephone Service.
American Telephone & Telegraph Co.

Tenoner. (Box and Crates.)
Chase Turbine Mfg. Co., Orange, Mass.

Terra-Cotta. (Ornamental.)
Atlanta Terra-Cotta Co., Atlanta, Ga.
Maryland Terra-Cotta Co., Baltimore, Md.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.

Threshers.
Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
Economy Engineering Co., Chicago, Ill.

Tile (Drain).
Oconee Brick & Tile Co., Milledgeville, Ga.

Tile (Interior).
Amer. Enam. Brick & Tile Co., New York, N. Y.
P & F Tile Co., Birmingham, Ala.

Tile. (Mantel and Promenade.)
Hood Brick Co., B. Mifflin, Atlanta, Ga.

Tile (Structural).
Oconee Brick & Tile Co., Milledgeville, Ga.

Timbers. (Cruciform.)
American Cruciform Works, New Orleans, La.
Republic Cruciform Co., Indianapolis, Ind.

Tin and Terne Plates.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tobacco Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.

Transformers.
Crocker-Wheeler Co., Ampere, N. J.
Triumph Electric Co., Cincinnati, O.

Trench Excavator. [See Excavator (Trench).]

Trucks. (Dry Kiln.)
Moore Dry Kiln Co., L. Jacksonville, Fla.

Trucks. (Platform, Freight, Mill, Factory, etc.)
Bernstein Mfg. Co., Phila., Pa.
Chase Fdry. & Mfg. Co., Columbus, O.

Trucks. (Storage Battery Auto.)
Westinghouse Machine Co., Pittsburgh, Pa.

Trucks. (Storage Battery) [For Warehouses & Industrial Plants]
Elwell Parker Electric Co., The, New York, N. Y.

Trust Companies. [See Bankers and Brokers.]

Tubes. (Boiler.)
Allegheny Steel Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
National Tube Co., Pittsburgh, Pa.

Tube Well Strainers.
Cook, A. D., Lawrenceburg, Ind.

Tubing.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Turbines. (Hydraulic.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Davis Foundry & Machine Wks., Rome, Ga.
Lefell & Co., James, Springfield, O.
Salem Foundry & Machine Wks., Salem, Va.
Smith Co., S. Morgan, York, Pa.

Turbines. (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Terry Steam Turbine Co., Hartford, Conn.
Western Electric Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Turn Buckles.
Broderick & Bascom Rope Co., St. Louis, Mo.

Turntables.
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

Twines.
Columbian Rope Co., Auburn, N. Y.

Important Information For Advertisers in Manufacturers Record

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TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Tools. (Machinists')

Holland Mfg. Co., Erie, Pa.
Morse Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Mechanical.)
Starrett Co., L. S., Athol, Mass.

Tools. (Pneumatic.)
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.

Tools. (Tinners')
Danzon Metal Works, Hagerstown, Md.

Torches.
Wall Mfg. Supply Co., F., Allegheny, Pa.

Towers. (Electric Transmission.)
American Bridge Co. of New York, N. Y.
Scalf & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
Caldwell & Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Columbia Pump & Well Co., Washington, D. C.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Memphis Steel Const. Co., Memphis, Tenn.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam Industrial Railroads.)
Conley Frog & Switch Co., Memphis, Tenn.
Upon Nut Co., Cleveland, O.

Traction Engines.
Fairbanks-Morse & Co., Atlanta, Ga.
Heer Engine Co., Portsmouth, Ohio.
Mott Mfg. Co., Inc., Peoria, Ill.

Tramway. (Overhead.)
Amburn Co. (Tramway Department), New York, N. Y.
Speidel, J. G., Reading, Pa.

Tramways. (Portable.)
Amburn Co. (Tramway Department), New York, N. Y.

Tramway. (Wire Rope.)
Amburn Co. (Tramway Department), New York, N. Y.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Caldwell & Sons Co., H. W., Chicago, Ill.
Link-Belt Co., Niles (Philadelphia), Pa.
Waterbury Co., New York, N. Y.

Unions.

Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburgh, Pa.

Upholstering Material. (For Auto's & Furniture)
Du Pont Fabrikoid Co., Wilmington, Del.

Vacuum Cleaning Apparatus.
King Co., F. E., Norfolk, Va.
United Electric Co., The, Canton, O.

Valves.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Columbian Iron Works, Chattanooga, Tenn.
Frick Co., The, Waynesboro, Pa.
Glamorgan Pipe & Fdry Co., Lynchburg, Va.
Jenkins Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
National Tube Co., Pittsburgh, Pa.
Powell Co., Wm., Cincinnati, O.
Pittsburgh Valve Fdry. & Const. Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.

Valve Boxes.
Clark Co., H. W., Mattoon, Ill.

Varnish.
Berry Bros., Detroit, Mich.

Vanner Machine.
Titus, E. E., Petersburg, Va.

Ventilating Apparatus. (Engineers' and Contractors')
Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Vices.
Holland Mfg. Co., Erie, Pa.

Wagons. (Dump.)
Troy Wagon Works Co., The, Troy, O.
Western Wheeled Scraper Co., Aurora, Ill.

Wall Coping.
Southern Sewer Pipe Co., Birmingham, Ala.

Wall Plags. (Galvanized.)
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Wall Tiles.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
Page Woven Wire Fence Co., Adrian, Mich.

Washers. (Ore and Phosphate.)
Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. [See Bolts, Nuts, Rivets and Washers.]

Watchman's Clocks.
Watchman's Clock & Supply Co., New York, N. Y.

Water Filters. (See Filters, Water, etc.)

Waterproofing. (For Brick Work.)
Barrett Mfg. Co., Philadelphia, Pa.
McCormick Waterproof Portland Cement Co., St. Louis, Mo.

Waterproofing. (For Concrete.)
Barrett Mfg. Co., Philadelphia, Pa.
John-Manville Co., H. W., New York, N. Y.
McCormick Waterproof Portland Cement Co., St. Louis, Mo.

Water-Softening Apparatus. (Purifying.)
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
N. Y. Cont. Jewell Filter Co., New York, N. Y.
Tucker & Laxton, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic).]

Water-Works Construction.
Berry-Fortune Const. Co., Ealington, Ga.

Water-Works Supplies and Appliances.
Allen-Scales Engineering Co., Nashville, Tenn.
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Const. Co., Philadelphia, Pa.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Clark Co., H. W., Mattoon, Ill.
Clarkville Fdry. & Mach. Works, Clarksville, Tenn.
Clow & Sons, James B., Chicago, Ill.
Coldwell-Wilcox Co., Newburgh, N. Y.
Columbian Iron Works, Chattanooga, Tenn.
Donaldson Iron Co., Emsus, Pa.
Glamorgan Pipe & Fdry Co., Lynchburg, Va.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.
Leadite Co., Inc., The, Philadelphia, Pa.
Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, Ohio.
Pomona Terra-Cotta Co., Pomona, N. C.
Salem Fdry. & Machine Works, Salem, Va.
Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
Standard Spiral Pipe Works, Chicago, Ill.
Stevens' Sons Co., H., Macon, Ga.
T. S. Cast Iron Pipe & Fdry Co., Burlington, N. J.
Warren Foundry & Machine Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.

Welding. (Oxy-Acetylene Process.)
Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

Welding Plants. (Oxy-Acetylene.)
Milburn Co., Alex. N., Baltimore, Md.

Welding Apparatus. (Oxy-Acetylene Process.)
Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

Welding Supplies.
Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

Well Contractors. (Oil, Artesian, etc.)
Columbia Pump & Well Co., Washington, D. C.
Cook, A. D., Lawrenceburg, Ind.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Hughes Specialty Well Drill Co., Charleston, S. C.
Stothoff Bros., Flemington, N. J.

Well Tools and Supplies.
Cook, A. D., Lawrenceburg, Ind.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.

Wheels and Axles.
Electric Wheel Co., Quincy, Ill.
Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Carts.
Sterling Wheelbarrow Co., Milwaukee, Wis.

Window Frames and Sash. (Fireproof.)
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The, Cincinnati, O.
Voigtmann & Co., Chicago, Ill.
Wagner's Sons Co., J. F., Louisville, Ky.

Window Guards. (Wire.) [See Wire Goods.]

Windmills.
Caldwell Co., Inc., W. E., Louisville, Ky.
Columbia Pump & Well Co., Washington, D. C.

Wire. (Barbed Wire, etc.)
American Steel & Wire Co., Chicago, Ill.
Cyclone Fence Co., Waukegan, Ill.
Koebling's Sons Co., John A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire. (Galvanized and Annealed.)
American Steel & Wire Co., Chicago, Ill.
Guif States Steel Co., Birmingham, Ala.

Wire. (Galvanized Telephone.)
American Steel & Wire Co., Chicago, Ill.
Guif States Steel Co., Birmingham, Ala.

Wire. (Plain Steel, Hoop, etc.)
Guif States Steel Co., Birmingham, Ala.

Wire. (Signal.)
Safety Insulated Wire & Cable Co., New York, N. Y.

Wire Cloth. (Iron, Steel, Brass, etc.)
Caldwell & Sons Co., The, H. W., Chicago, Ill.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
Bollie Iron & Wire Wks., J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggott & Co., Baltimore, Md.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
American Steel & Wire Co., Chicago, Ill.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebling's Sons Co., John A., Trenton, N. J.
Waterbury Co., New York, N. Y.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire Rope Clips.
American Steel & Wire Co., Chicago, Ill.
American Hoist & Derrick Co., St. Paul, Minn.
Broderick & Bascom Rope Co., St. Louis, Mo.

Wires and Cables. (Insulated.)
Safety Insulated Wire & Cable Co., New York, N. Y.

Wood Blocks. (For Paving and Factory Floors)
U. S. Wood Preserving Co., New York, N. Y.

Wood Distillation.
Struthers-Wells Co., Warren, Pa.

Wood Pipe. (For Water, etc.)
Wyckoff & Son Co., A., Elmira, N. Y.

Wood. (Preservative.)
Barrett Mfg. Co., Phila., Pa.

Woodworking Machinery.
Chase Turbine Mfg. Co., Orange, Mass.
Gibbs Mach. Co., Inc., Columbia, S. C.
Kline, Lewis T., Alpena, Mich.
Lane Mfg. Co., Montpelier, Vt.
Smith Machine Co., H. B., Smithville, N. J.

Yarn. (Tarred Sisal.)
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